

**MARKING AND TRACING
SMALL ARMS
AND LIGHT WEAPONS**

IMPROVING TRANSPARENCY
AND CONTROL

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ACRONYMS

AD	Armes de défense
AdD	Administration des Domaines (Belgium)
AG	Armes de guerre
BATF	Bureau of Alcohol, Tobacco and Firearms (USA)
BE	Banc d'Epreuves (Belgium)
BF	Belgian Frank
BSR	Brigade de Surveillance et de Recherche (Belgium)
CASA	Coordinated Action on Small Arms
CFE	Conventional Armed Forces in Europe
CFR	Central Firearms Register
CIF	Cost, Insurance, Freight included in the price
CIP	Commission Internationale Permanente
CMP	Civilian Marksmanship Program (USA)
ECHO	European Community Humanitarian Office
ECOSOC	United Nations Economic and Social Council
ECOWAS	Economic Community of West African States
EU	European Union
FN	Fabrique Nationale Herstal (Belgium)
GAO	General Accounting Office (USA)
GRIP	Groupe de Recherche et d'Information sur la Paix et la Sécurité
HRW	Human Rights Watch
IANSA	International Action Network on Small Arms
IBE	Institut Belge d'Emballage (Belgium)
ICAO	International Civil Aviation Organization
ICRC	International Committee of the Red Cross
IEACS	European Institute for Hunting and Sporting Firearms
INCC	Institut National de Criminalistique et de Criminologie (Belgium)
Interpol	International Criminal Police Organization
IWETS	Interpol Weapons and Explosives Tracking System
KFOR	Kosovo Force
KLA	Kosovo Liberation Army
NATO	North Atlantic Treaty Organization
NGO	Non-Governmental Organisation
NRA	National Rifle Association (USA)
NTC	National Tracing Center (USA)
OAS	Organization of American States
ODA	Overseas Development Administration (UK)
OSCE	Organization for Security and Co-operation in Europe
PrepCom	Preparatory Committee
RCA	Registre Central des Armes (Belgium)
RPF	Rwandan Patriotic Front
RTBF	Radio Télévision Belge Francophone (Belgian French speaking Radio-TV)
SAAMI	Sporting Arms and Ammunition Manufacturers Institute
USSR	Union of Soviet Socialist Republics
VRT	Vlaamse Radio-TV (Flemish Radio-TV)
WFSA	World Forum on the Future of Sport Shooting Activities

Executive summary

Small arms and their ammunition have become weapons of choice in armed conflicts and violent crime in recent years. Acknowledging the problem, a number of governmental, intergovernmental and private organisations conducted studies with a view to combating illicit transfers and uses of these weapons and limiting their dissemination and proliferation. The UN organized a conference to specifically address the subject for the first time in July 2001.

One of the major hurdles facing the struggle to curb this phenomenon, increasingly recognised by the community of experts active in this domain, is the difficulty—and often the impossibility—of identifying the connections and responsibilities of those involved in the illicit production, transfer and uses of small arms. Indeed, when an investigation is launched, it is rapidly confronted with the impossibility of working its way back to the source of the weapons and tracing the route they followed. Alongside the lack of harmonisation of national legislation and the absence of preventive measures, two important factors stand out as contributing to this failure:

1. Weapons are not marked in a reliable and universal manner, if they are marked at all.
2. Production and transfers that are legal at the outset are not systematically recorded, which allows subsequent illicit transfers without the possibility of identifying the link in the chain where the re-routing occurred.

This report discusses the intrinsic links between licit and illicit markets and the relation between ‘civilian’ and ‘military’ weapons, emphasising the need to adopt a global approach to these issues. The UN definition of small arms and light weapons and their ammunition is addressed, as are their common characteristics.

Chapter 2 describes the current system for marking and tracing small arms in both the civilian and military markets and upon production and sale. On the whole, the situation is judged to be unsatisfactory since only the packaging required for shipping ammunition and explosives is subject to internationally accepted norms. Marking and tracing therefore currently depends on the goodwill of

states, producers and clients. Transfers from the military market of small arms that are destabilising and lead to illicit uses are frequent. Their origins vary from thefts of military stockpiles to UN embargo violations. On the civilian market, which is geared towards private individual consumers, a great number of weapons remain unrecorded, and national legislation differs considerably from country to country.

Chapter 3 is devoted to a detailed study of existing Belgian legislation regulating trade, production and possession of weapons, as well as the administrative bodies responsible for ensuring its implementation. Several recommendations aimed at improving small arms tracing are formulated. It also includes a brief overview of the situation in several other countries, limited to some particular aspects concerning marking and the possibilities for tracing small arms.

Interpol, although limited on account of insufficient resources, adopted several resolutions revealing that it has been preoccupied with the crucial issue of illicit production and transfers for several years, in particular the need to mark weapons, harmonise legislation and exchange information.

Chapter 4 examines the various initiatives aimed at elaborating an international juridical instrument on the manufacture and transfers of small arms, particularly the Convention of the Organisation of American States that includes provisions for the marking of weapons, and the Firearms Protocol of the UN Economic and Social Council, established in Vienna within the framework of the Convention against transnational organised crime. While it does not address transfers from state to state—despite the fact that these a great number of subsequent illicit transactions originate in these transfers—this Protocol is the first international tool enjoining governments to establish a minimum degree of transparency and common norms to combat firearms trafficking, including through the establishment of marking systems and appropriate registers.

This is followed by a review of recent Canadian and Swiss sponsored research on developing a reliable and universal system of marking small arms and ammunition. This reveals that, from a technical point of view, apparent difficulties can

easily be overcome thanks to recent technological advances. The marking of plastic explosives so that they can be detected, as imposed by the UN, clearly exemplifies that political will is crucial to the success of these initiatives.

In the final chapter, the author presents a number of recommendations. In addition to a reliable and universal system of marking at the manufacturing stage, all weapons transactions should be systematically recorded at national and international levels and centralised in a common register. This register should be accessible to states and eventually to authorised investigators. The 're-recording' of weapons that are already in circulation according to the new method of centralisation, and the 're-marking' of those that do not exhibit any markings, should be obligatory. Furthermore, the establishment of an international agency, with national offices and backed by the UN, is

recommended. It should have among its objectives to increase transparency, collect information related to international transfers, ensure after-sales follow-up and initiate investigations in the event of illicit re-routing or uses. This method addresses the very problem associated with small arms that has so far been too often eluded: their control after the initial delivery.

Through these measures, facilitated by the development of information technology and the emergence of new marking techniques, governments would be bound to assume their responsibility with regard to respect for human rights and international humanitarian law.

The report concludes with an analysis of the July 2001 UN Conference on small arms and light weapons and its Programme of Action, from the point of view of marking and tracing.

Introduction

The problem of small arms and related ammunition is starting to be well known and documented. Uncontrolled proliferation has led to their lethal use in an increasing number of internal conflicts as well as in civil society where they exacerbate violent crime and are used, often abusively, for the purpose of self-protection. The United Nations Organization (UN) recognised these two facets of small arms proliferation in two reports on their impact in conflicts published in 1997 and 1999, respectively, and in the Firearms Protocol negotiated in 2001 within the framework of the Convention against transnational organized crime.

These issues were also addressed at a conference organised by the Belgian Secretary of State of Development Cooperation in Brussels, Belgium, on 12–13 October 1998. The conference specifically highlighted the link between development and disarmament. The present report grew from a GRIP paper distributed at this event (Berkol, 1998).

The difficulties inherent in tracing the source of illicit small arms have been stressed in several reports produced by governmental, intergovernmental and non-governmental organisations alike. The lack of adequate marking makes it impossible to identify the manufacturer and the various intermediaries who facilitate the transfer of small arms to combatants, criminal circles or other entities that use these lethal instruments abusively. These difficulties have for instance impeded the work of the UN Commission of Inquiry on Rwanda, leaving traffickers to proceed with impunity and rendering the task of dismantling their channels unlikely, if not impossible. Responsibilities end up being diluted, enabling unscrupulous manufacturers and merchants to go about their business without worrying about possible consequences.

However, rapid technological advances in marking small arms and ammunition should go a long way towards remedying this situation. New techniques involving computer science and lasers mean that arms can be marked in a permanent and harmonized way worldwide. This will allow transfers to be traced using registers that keep track of each transaction. The establishment of a small arms register, inspired by the UN register which is

currently limited to general data on heavy conventional weapons, could be used to trace each transaction. An international small arms register would be a powerful instrument for enhancing transparency, particularly for states committed to reporting all of their arms manufacture and transactions. It would help build confidence in unstable regions and would contribute to conflict prevention by flagging excessive transfers.

An international system for marking and tracing small arms would be an efficient tool to combat their illicit manufacture, transfer and use. While it would not provide an instant solution to the problem of illicit arms stockpiled worldwide, it could prevent these stocks from accumulating and might eventually foresee their elimination. It would go a long way towards reversing the current trend, particularly prominent since the end of the Cold War, that features a growing number of small arms users resulting in a growing number of victims.

GRIP considers this report as a first step in the complex issue of marking and tracing small arms. Readers are invited to send us their observations, criticisms and suggestions, in order to help us delve deeper into the matter and improve upon the recommendations concerning the marking and tracing of small arms elaborated in this report.

GRIP was one of a number of civil society representatives that participated actively in preparing the 'UN Conference on the Illicit Trade in Small Arms and Light Weapons in all its Aspects', held in July 2001. GRIP's contribution included several publications and workshops. The implementation and follow-up of the Conferences' Programme of Action is essential for ensuring that the proliferation of and illicit trafficking in these "weapons of mass destruction" is successfully vanquished. To this end, GRIP organised an international conference in Brussels in October 2001,¹ with the participation of Mr. Camilo Reyes, President of the UN Conference, numerous government representatives, experts and NGOs.

Marking and tracing were at the heart of discussions at the July 2001 UN Conference. GRIP is

1. IANSA Conference 'Proliferation of Small Arms: What European Policy after the UN Conference?', Brussels, 5–6 October 2001.

now developing a model convention on tracing² within the framework of a UN feasibility study for an international instrument to identify and trace illicit small arms and light weapons, as foreseen in the follow-up section of the Programme of Action.

Bernard Adam
GRIP Director

2. Ilhan Berkol, 'Practical Aspects of Marking and Tracing of Small Arms and Light Weapons in View of a Model Convention.' Paper prepared for IANSA Conference: 'Proliferation of Small Arms: What European Policy after the UN Conference?,' Brussels, 5-6 October 2001 (see: www.grip.org).

1. Overview of the issues

Small arms are widely used in intra-state conflicts and, according to many researchers, over 50 per cent of small arms victims are civilians, most of them women and children (Goldring, 1997/1; Laurance, 1998; Berghezan and Adam, 1998; Greene, 1997).³ Two studies by the International Committee of the Red Cross (ICRC) reveal that in two recent armed conflicts, civilians accounted for at least 35 per cent of people injured and 64 per cent of those killed (ICRC, 1999).⁴

To date, the international community's response to the tragic consequences of these wars has been mostly reactive, in the form of either humanitarian intervention to provide relief to the people or through peacekeeping operations to implement an agreement between warring parties. These operations are often hindered by the proliferation of small arms. In both scenarios, the cost in human lives and equipment is steep and the international community runs the risk of becoming directly involved in the conflict. Preventing the outbreak of armed conflicts is the only way to avoid these problems.

ICRC research on the 101 internal armed conflicts that occurred between 1989 and 1996 reveals that small arms were practically the only weapons used and were responsible for more than 3 million deaths (ICRC, 1999, pp. 16–17). While the outbreak of war cannot be directly attributed to small arms, their widespread availability makes wars more deadly, thus exacerbating the conflicts and delaying the process towards peace. They also contribute to maintaining a culture of violence once a conflict has officially ended. Research reveals that for several months afterwards, civilians continue to suffer and the death toll linked to small arms only drops by an average of 20 to 40 per cent (Meddings, 1997). It is estimated that 200,000–300,000 people are killed each year by small arms during conflicts. The figure would be closer to half a million per year if deaths unrelated to the conflicts (e.g. crime, suicide, accidents) are factored in (Krause, 1999).⁵

Adequate control over transfers of these arms⁶ is therefore crucial to avoid their dissemination to countries where conflicts are brewing.⁷ Warring parties, however, rarely encounter any problems obtaining small arms. Not one country under em-

bargo is in short supply of arms and ammunition. At the same time, crime is constantly on the rise in most civil societies.⁸ This shows that the control of small arms transfers is far from efficient. The legal loopholes in this area foster the spread of illicit transfers and the diversion of legally purchased arms onto the illicit or 'grey' market.

As current regulations stand, identifying those persons responsible for the diversion of small arms and ammunition trade is difficult since no international system exists to oversee this task. The problem is in large part due to the *a posteriori* approach of the international community in its efforts to trace the path of small arms and identify those responsible for their deviation from the legal arms circuit. Such retroactive investigations rarely prove conclusive as they tend to be initiated belatedly and often involve a number of indeterminable factors (UN, 1996/1 and 1998/1).⁹ Furthermore, investigators face considerable hostility, not only in countries in conflict but also in countries suspected of trafficking, which often neighbour those in conflict.¹⁰ That is why action must be taken at the onset of arms circulation before the unknown variables accumulate.

3. Small arms are said to be the cause of 90 per cent of those killed or wounded in these conflicts, according to the International Action Network on Small Arms (IANSA): <http://www.IANSA.org>.

4. Another study in the same report reveals that of those injured by weapons, 59 per cent were either civilians or those who did not sustain their injuries as a result of inter-factional fighting, pp. 38–43.

5. Krause refers to small arms as 'the real weapons of mass destruction'.

6. The ICRC defines arms transfers as 'all arms...transferred outside the control of the producing state,' and includes commercial sales as well as non-monetary arrangements. 'Dissemination' is the uncontrolled spread of arms in society.

7. In 1996, civil conflicts constituted threats in 23 countries, affecting over 35 million people.

8. In 1998, armed attacks increased by 62 per cent in Belgium compared to the previous year (*RTBF*, 29 March 1999). In Charleroi alone, criminality reached alarming levels in 2001.

9. An example that speaks for itself is the establishment of the International Commission of Inquiry on arms transfers to Rwanda, first established in 1995 (UN Security Council Resolution 1013, 7 September 1995) and renewed in 1998 (Resolution 1161, 9 April 1998). The Commission was unable to trace the source of the arms supply or identify those responsible for the illicit deliveries.

10. Officials from the UN International Commission of Inquiry on arms transfers in Rwanda interviewed by the authors on 1 October 1998 explicitly blamed Kenyan officials with regard to the provision of supplies from the Eldoret ammunition factory to factions in the Rwanda conflict.

Marking: a precondition for effective tracing

Arms and ammunition can be identified through marked inscriptions in the form of a serial number, manufacturer's initials or name, weapon type, or the purchaser's mark. These inscriptions, which are called 'markings', are the only elements that enable arms and ammunition to be registered and their trajectory followed, with a view to locating the point of diversion and following up the route covered by these items — a process referred to as 'tracing'.

To prevent trafficking in small arms and ammunition and thus attenuate their harmful effects in internal conflicts, the international community should initiate the tracing process at the source, that is, at manufacture. As the great majority of arms are manufactured in industrialized countries,¹¹ every measure needed for adequate registration could be taken at the point of production. This would enable their itinerary to be tracked from the outset.

It is therefore crucial to establish a system for permanent and universal marking that will enable small arms and ammunition to be registered and tracked throughout their lifetime. Consequently, the various players in the circuit would each be held accountable and the arms market would have improved controls. It would then be possible to identify, if needed, the point at which a possible breach may have occurred.

It follows that producer states should do their utmost to strengthen and harmonize their laws concerning the manufacture and trade of these products. At the same time, an international agreement is necessary for the reliable tracing of arms routes from one country to another.

1.1. Licit and illicit circuits

Having recognized the small arms problem, the international community is focusing on measures to improve the control of its illicit aspect, i.e. trafficking. This is a welcome measure, but it should not be tackled in isolation from the legal trade. The real problem lies in the very presence of small arms and ammunition in places of actual or potential violence and instability, and not whether they ended up there through legal or illegal channels. Governments cannot use illicit trafficking as an excuse to cover up the responsibility of producers, suppliers and

end-users of small arms and ammunition. It so happens that in addition to existing stockpiles totaling an estimated 500 million small arms and light weapons produced for military use (Isenberg, 1997), the arms industry continues to produce and export new weapons. Moreover, an excess production capacity has resulted from force reductions undertaken by major military powers. The proliferation and dissemination of these weapons can only be curbed by controlling production and sales, with a view to limiting demand linked to the security of populations.

Moreover, since the security forces of numerous countries regularly renew their arms stocks, they resell the old surplus on the second-hand market, whether civil or military, with some invariably ending up in the illicit circuit.¹²

Governments are well aware of the problem of 'legal' international transactions ending up in countries under embargo (Maréchal, 1998, pp. 1–127, 128, Laurance, 1998). The legal recycling of surplus arms indirectly causes an increase in demand on the illicit market. Since this circuit is regularly supplied with a slew of arms diverted from the legal market, it is difficult to prevent groups and individuals in unstable regions from acquiring them (UN, 1996/1 and 1998/1). Thus, excess arms supply not only increases demand in countries where there is conflict, but at the same time sustains the illicit market.

There is currently very little data available on small arms trafficking. OXFAM studies indicate that 55 per cent of the total trade in small arms is illicit (IANSA, 1999). For instance in the Great Lakes region (Central Africa), a 'grey' zone has emerged in which illicit trafficking has been a major source of small arms alongside legal transfers. According to several investigators, some states have knowingly issued false end-user certificates and

11. According to *Jane's Infantry Weapons*, 1998–1999, 24th edition, London, there are 207 small arms manufacturing firms in the world, of which 183 are in developed countries; among the 83 ammunition manufacturers mentioned, 71 are in industrialized countries.

12. Based on the authors' interview with a Belgian *Gendarmerie* official on 9 April 1999, it is not uncommon for arms resold by the *Administration des Domaines* (state service) to end up on the illicit market and in the hands of criminals. Another interview conducted on 13 August 1998 with officials of the *Banc d'Épreuves*, the organization responsible for controlling the quality of Belgian-produced small arms destined for the civilian market, confirmed this.

have gotten involved in the illicit or covert deliveries of arms. Licit and illicit trade are thus correlated.

The fact that some licit arms transfers are eventually used illicitly should provoke reflection on the part of policy-makers. In the absence of basic information on the scope and destination of state-authorized shipments, however, they tend to focus on controlling illicit trade—a tricky task to undertake. It would be simpler, more straightforward and less costly to implement measures to ensure responsibility within the licit trade instead. In theory, mastering control over the legal circuit should bring about the elimination of the illicit circuit altogether. This is the one and only way to ensure transparency for the entire market, with the exception of stolen weapons.

1.2. Correlation between military and civilian small arms

While military and civilian markets are separate at the outset, small arms for military use, which are significantly more lethal, are widely available in civil society through resale of surplus stock. The security forces of many countries regularly organize sales of their excess stock, much of which is purchased by arms dealers who resell them to civilians. When this happens, automatic weapons are rendered semi-automatic¹³ or ‘demilitarised’.¹⁴ This is not irreversible and the parts needed to reconvert a weapon to automatic can be purchased from the same dealers. While this conversion is not permitted by law, controlling it is impossible in practice. Thus, some semi-automatic weapons such as Kalashnikovs and Mausers are reconverted into automatic weapons and put in the hands of criminals or insurgents.

Most notably since the end of the Cold War, civilians have taken up arms for their self-protection in regions where insecurity reigns. Some countries condoned and even encouraged this practice. In Guatemala, for example, the government eased its laws on arms possession in 1992, while in Rwanda massive quantities of arms were distributed to ethnic Hutu citizens between 1991 and 1994 to set up self-protection forces, thereby contributing to the escalation of violence, which reached genocidal proportions in April 1994. Likewise, in Mozambique, hundreds of thousands of weapons were distributed to the civilian popula-

tion for so-called self-protection. In South Africa, the Ancien Régime distributed 4,000 automatic weapons to civilians in order to divide the opposition against itself (Laurance, 1998, p. 37). Small arms thus lead to the gradual militarization of civil society and contribute to creating a culture of violence (Oud Abdallah, 1996),¹⁵ (Greene, Bourne, Gardner & Louise, 1998).

Conversely, in some countries arms designed for civilian use, such as hunting rifles, are used in conflicts. For example, Kurdish combatants in the Middle East use twelve- to twenty-calibre shotguns.¹⁶ The UN has found that in some conflicts non-military arms like hunting rifles or home-made guns were used in combat or to harass the population (UN, 1997).

In the United States, army surplus is so massive that military arms are regularly recycled into civil society. In 1996, the US Army created a private group, the CMP,¹⁷ to regularly liquidate its rifle stocks. These weapons are sold only to individuals and sporting clubs. According to a US General Accounting Office (GAO) report¹⁸, CMP sold 22,584 guns from October 1996 to September 1998: over 75 per cent were M-1 Garand semi-automatics and the remaining 25 per cent were 22-calibre rifles (GAO, 1999). The GAO report notes that these guns were sold in the absence of strict background checks on the buyers, which led Congress to request an investigation. Some of these guns may have thus ended up on the illicit market. Furthermore, the economic justification for these resales is questionable given that the Pentagon continues to subsidize CMP. In 1999, the US Army put 270,000 rifles at the disposal of CMP, which continues to sell them to civilians. Ironically, CMP describes its mission as ‘contributing to the

13. Once the first cartridge has been shot, reloading is automatic but the user must activate the trigger a second time for the following shot.

14. An operation that involves adapting a weapon so that it can fire ammunition designed for a hunting or sporting rifle.

15. According to the author, in Burundi civilians did not have weapons prior to 1991. Between 1991 and 1996, practically every family acquired at least one weapon for their own protection.

16. Meeting with a Liège *Banc d'Épreuves* official, *op. cit.*

17. ‘The Civilian Marksmanship Programme’ is a corporation for the promotion of gun practice and firearm safety. It was run by the US Army from its establishment in 1903 until September 1996 when it became a private company.

18. See: <http://www.gao.gov/new.items/ns99041.pdf>

education of American youth and citizens to improve security and discipline in the nation' (GAO, 1999, p. 27).

In practice, therefore, there is major overlap between military and civilian arms. Distinguishing between the two is becoming increasingly difficult, notably in conflict situations where 'civilian' firearms are used by warring factions and 'military' arms trickle into civil society and toward criminal circles.

1.3. Correlation with illicit products

Several researchers recommend the exchange of information among countries, security forces and within the intelligence and police services on all products which, like drugs, are traded illicitly (Greene,

1997). This information can be collected and disseminated, for instance through the Interpol database. However, a fundamental difference exists between cases involving small arms and ammunition and those involving illicit drugs for example: the former usually start out as legal trade, whereas virtually the entire production chain for the latter is illegal.

Establishing a new system for the control of small arms similar to that for drugs would quickly reveal its limitations. It should be noted that both circuits are currently intertwined and probably follow the same channels, since the control of licit arms trafficking has many loopholes. In addition, criminal organizations not only control the traffic of arms in civil society but also play a major role in the delivery of arms in violent conflicts.

2. Definitions

2.1. Small arms and light weapons

Small arms and light weapons are usually defined as those that can be carried by an individual, pack animal or light vehicle. The United Nations Group of Experts divided these into three categories. Of these, the highest-calibre weapon is just below the minimum calibre covered by the United Nations Register of Conventional Arms, which is 100mm (UN, 1997):

a) Small arms:

- Revolvers and self-loading pistols;
- Rifles and carbines;
- Sub-machine guns;
- Assault rifles;
- Light machine guns.

b) Light weapons:

- Heavy machine guns;
- Hand-held, under-barrel and mounted grenade launchers;
- Portable anti-aircraft guns*;
- Portable anti-tank guns and recoilless rifles*;
- Portable launchers of anti-tank missile and rocket systems*;
- Portable launchers of anti-aircraft missile systems;
- Mortars with a calibre of less than 100mm .

c) Ammunition and explosives:

- Cartridges (rounds) for small arms;
- Shells and missiles for light weapons;
- Mobile containers with missiles or shells for single-action anti-aircraft and anti-tank systems;
- Anti-personnel and anti-tank grenades;
- Landmines;
- Explosives.

According to the Group of Experts, these weapons must be ‘manufactured for use as lethal instruments of war’ which presumably excludes arms like sporting and hunting firearms (Berghezan and Adam, 1998, p. 7). Yet both have to be considered lethal. Moreover, the categories are often confusing, since some defensive or military-type arms are used for sport shooting subject to authorization, and hunting rifles are used in certain internal conflicts. Hunting and sporting rifles are

also the most common method of committing suicide and are often the source of accidents. Furthermore, their presence can incite acts of aggression and abuse.¹⁹

Hand weapons like daggers, machetes, and clubs are also deemed to be small arms.

2.2. Miscellaneous definitions (Maréchal, 1998)

2.2.1. Arms

- *Hand weapons*: arms that injure an adversary through direct contact using muscle power alone.
- ‘*Armes de défense*’²⁰ (hereafter referred to as ‘*AD arms*’): these mainly include short-range firearms (with a barrel length of less than 30cm), long-range semi-automatics (fire one shot at a time, but reload automatically) and rim-fire arms (like 0.22 calibres).
- ‘*Armes de guerre*’²¹ (hereafter referred to as ‘*AG arms*’): mainly include automatic firearms (able to fire various projectiles during one sustained pressure on the trigger), civilian firearms resembling automatic rifles (copies or of different calibre than those used by armed forces) and sub-machine guns.
- *Hunting and sporting shotguns*: arms that do not fall under any other category, repeating-fire and single-action AD or AG arms that, once the barrel chamber and tube are replaced, have been adapted for the strict purpose of using ammunition for hunting and sporting firearms, and short-range arms designed for sport shooting with the capacity for a five-shot loader at most.

* These weapons are sometimes mounted.

19. On 13 June 1999 in Rixensart, Belgium, a hunter shot and killed at point blank range a teenager who was wandering on his land with friends. *Le Soir*, 3 July 1999.

20. Translator’s note: Literally, “defence arms.” As English weapons terms and definitions vary from the French terms in the original text, the abbreviation of the French term is used and will be referred to for the purpose of this text.

21. Translator’s note: Literally, “war arms,” or military-type combat arms. As English weapons terms and definitions vary from the French terms in the original text, the abbreviation of the French term is used and will be referred to for the purpose of this text.

2.2.2. Ammunition

(Maréchal, 1998, pp. 1–219, 220)

Ammunition is defined by its calibre in millimetres (e.g. 6.35, 7.65 or 9mm), inches (e.g. 0.22 inch) or in conventional terms (e.g. 38, 320 or 380). Its components include a cartridge case, cap, powder and bullet.

The *cartridge case* holds the ammunition. Normally made of brass, it contains the propellant charge inside and houses the primer in its base. When the firing pin strikes the cap, a flash ignites the propellant.

The *percussion cap* is loaded with anti-corrosion powder and consists of a small copper cup containing an explosive and a copper, cone-shaped anvil.

The cartridge contains two basic kinds of *powder*: black powder, characterized by its rapid clogging capacity, which is used less and less frequently; and the more commonly used smokeless powder, which leaves just a slight residue.

The *bullet* is located at the tip of a cartridge. It is in the form of a cylinder with an ogival tip, normally made of antimony-hardened lead or steel-tipped zinc. Upon ejection, the barrel grooves cause the bullet to rotate rapidly on its axis.

2.3. Particularities of small arms

Small arms and light weapons have characteristics that make them well suited for wide-scale use in internal conflicts. They can be used by a range of entities, from conventional armed forces and rebel groups, terrorist and mafia rings, to regular citizens for the purpose of self-protection. In civil societies, weapons used in armed attacks, homicides, accidents and suicides exclusively involve small arms or light weapons. Small arms and light weapons have the following distinguishing features:

- They are inexpensive. In the 1990s, an AK-47 or FN-FAL assault rifle could be purchased for about USD 20 in Mozambique, Angola or Albania, for example.

- Unlike major weapons, they can be acquired on both the civilian and military markets, which increases their availability on the illicit market.
- They are easy to conceal and move from one conflict area to another.
- They have a long lifespan. As they feature few moving parts and require little maintenance, they can remain operable for decades.
- They are easy to use and effective and can thus be handled by combatants with little training or, increasingly, by children (Rädda Barnen, 1998; Bellamy, 1999).²²
- They can cause a great deal of damage in little time. Rapid developments in new technologies make it possible to fire over 700 rounds a minute have made these arms excessively lethal.²³ In most recent conflicts, small arms have been the source of many more casualties than major weapons (Wallenstein and Sollenberg, 1997). From 1989 to 1996, internal conflicts are said to have caused over 3 million deaths (Legard-Sivard, 1996).
- Unlike major weapons, small arms can be legally acquired by any citizen in a civil society, and even minors can access them through persons in their entourage.²⁴

22. According to various sources, there are currently over 300,000 child soldiers under the age of 16 who have used these arms in conflicts.

23. Some sophisticated weapons can measure the distance to the target using a laser telemeter with a ballistic computer. 'Intelligent' ammunition with integrated telescopes and projectiles that can be programmed to reach invisible targets are already being used by the US army (interview with Vern Shisler and Mike Claune, US Armed Forces small arms officials; 'La Sept ARTE' television show: 'Kosovo, guerre et paix en Europe' [Kosovo, War and Peace in Europe], June 1999). The new strategic philosophy advocates the downsizing of armed forces by increasing the destructive capacity of weapons.

24. For example in practice, except in certain countries like Canada, nothing prevents children from using their father's hunting or sporting firearm if he allows them to or if he fails to keep the gun from their reach when he is not using it.

3. How small arms and ammunition are marked and traced today

How are small arms currently marked? Can small arms be traced to their source? How are ammunition transfers controlled? Who is involved?

3.1. Overview

3.1.1. Small arms

Current marking practices are neither sufficient nor uniform, and are sometimes altogether lacking. No existing international convention defines a comprehensive standard for marking arms. Nevertheless, firearms are normally marked by stamping, casting or engraving. Usually, the marking indicates the type of arm, serial number and, in some cases, a quality standard number or acronym. This does not however enable a firearm's exact source or path to be traced.

Moreover, in the absence of international or national registers on small arms and ammunitions transfers, tracing their circulation is nearly impossible. To better illustrate the problem, a comparison can be made with cars which, for their part, are well registered. While the model and type of a small arm found anywhere in the world can be identified (e.g. AK-47 or FAL assault rifle), unlike cars, its former owners, place of manufacture, and path cannot. A firearm serial number is like a car chassis. Firearms lack the equivalent of license plates and registration numbers that could be kept track of, preferably in an international register. Of course the problem of car trafficking is not yet fully solved, but this comparison shows that the system for controlling arms is not up to par with that for cars. Moreover, there have been no new developments in firearm marking for years. Adequate marking is however a precondition for reliable registration.

Problems regularly arise in attempting to trace recovered firearms. Firstly, markings are not indelible. Serial numbers are often removed or falsified. While there are methods to recover original serial numbers, they are costly and only successful in one third of cases²⁵ relating to 'civilian' arms. It is not to our knowledge possible to quantify falsifications of military arms. Secondly, the

numbers marked on arms do not identify the country of manufacture or the factory that produced them. Moreover, the same serial number can be found on several of the same type of firearm if these are manufactured in different countries under the same license.²⁶ Some manufacturers periodically reset their numbering system.²⁷ It is known that since 1945, at least 15 countries have produced nearly 7 million FAL assault rifles, while approximately 50 million AK rifles have been produced in the USSR and, under license in 14 other countries since 1948 (Ezell, 1995). Clearly, the lack of a precise marking system renders identification extremely difficult.

Furthermore, there is no single international register to collect information on small arms transfers. There is no requirement that markings be universally recognizable, which would be the only way to control their circulation. The current marking system does not enable a weapon to be traced back from the point of its diversion from the legal market to its original source. This means that once a firearm leaves its country of origin, the responsibility of manufacturers and other players becomes difficult to establish since, once transferred, it is no longer subject to the producer country's controls. The difficulty in imposing sanctions against infractions incite traffickers to continue with their illicit activities and accounts in part for the large share of illicit trafficking in the small arms market.

3.1.2. Ammunition

The underside of ammunition shells usually display manufacturer initials and calibre. These are either engraved or painted. These markings alone are not sufficient to trace the ammunition's origin or path. This means that only the type of ammunition can be identified on the ammunition itself.

Other potential complementary markings like batch numbers and ammunition type may appear on packaging but are lost once the packaging is

25. According to the heads of the Belgian Ministry of Justice's *Institut National de Criminalistique et de Criminologie*, approximately one-third of the arms forwarded to them for tracing have had their serial numbers removed, and only one-third of these trafficked firearms' serial numbers can be recovered.

26. Authors' interviews with a Belgian Foreign Affairs Ministry official and a Royal Military Academy official.

27. Authors' interview with a Belgian Foreign Affairs Ministry official.

removed. The origin of ammunition can therefore easily be masked by repackaging it.

Further, because ammunition is consumed upon use, tracing it is problematic. Furthermore, its consumption can be easily attributed to military exercises or manoeuvres, for instance, to explain its disappearance from a scene and thus cover up its diversion to the illicit market.

As with small arms, national laws applying to ammunition are neither harmonized internationally, nor do they impose specific markings to enable tracing.

Since ammunition is considered a dangerous good, its packaging for transportation must be approved by an institution recognized by the exporting country, in compliance with international regulations on transportation of hazardous material. These regulations are directly based on the recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods (UN, 2001/1). Packaging is regularly tested for resistance to falls and stacking requirements, and are then marked with a 4-digit UN number referring to ammunition category and type. Letters are added to indicate country and exporter. A clearance certificate is delivered by the given ministry's administration for the export of the material (Wittebolle, 1997).

Since this system is harmonized, procedures for classification, packing, marking, labelling, posting and documentation are identical in every country (UN, 1993, pp. 1–2, para. 1.5–1.6–1.7–1.9.1). The Committee of Experts insists on harmonizing national regulations based on UN recommendations as *modus operandi*. This would mean that during transportation the merchandise and its origin should be recognizable anywhere in the world. But this only applies for packaging, not the marking or control of ammunition. As such it is the package itself that is traced and tracked and not its contents.²⁸ Nevertheless, this example shows it is possible to reach international consensus on this subject.

3.1.3. Small arms and ammunition transfers

Unlike heavy weapons, small arms and ammunition circulate on both the military and civilian markets. The laws governing these two circuits differ already at the point of manufacture. Thus,

despite the fact that the lines separating these two markets are often blurred when arms become illicit, they continue to be treated differently from a legal perspective.

The military market

The military market involves primarily transfers to states. A survey of various national laws on military arms and ammunition reveals that in the interests of national security confidentiality, these laws are not harmonized internationally, nor is an international transfers register maintained. Transfers therefore remain secret, and all the more so because marking is not required. Nevertheless, a purchaser—in this case, usually the state armed forces—can specially request manufacturers to mark the serial number, type, model, and even the country of manufacture or purchase of arms.

In NATO countries, for example, NATO standards are normally applied but are not, however, legally binding (Ezell, 1988).²⁹ Recognising the problem of identification, security forces in these countries assign and stamp an internal number on their arms, which enables them to track their inventories. This number is known only to the armed force employing the weapon, and as such would be difficult to trace in the event of an investigation into suspect arms.

Moreover, some military arms orders do not request any particular markings. The manufacturer conforms to the buyer's demands, and in the absence of a request, can determine a marking of its choice. Therefore in the name of military secrecy, the details of these types of orders—particularly state-to-state transactions—are kept in records

28. It should be noted that it is possible to trace the different components of the finished packaging (for example, the rollers of raw materials used in the production of a cardboard) to their original manufacturer and to determine responsibility for technical failure at the time of transportation or storage. This does not apply for ammunition, however.

29. This includes an ISO 9001 quality control standard, AQAP-110, which needs to be verified by the purchaser's competent authority, and control data corresponding to a Nato Stock Number (NSN), which defines the grouping and class of all kinds of products, their country of origin and item type (see: <http://www.nato.int/structur>). This number is not permanent, however, and neither does it provide unique identifying information. The precise origin of the product cannot be identified using this number, which is identical to the same product class made in the same country.

that are inaccessible to any outside party. In addition, arms and ammunition manufactured for covert delivery do not usually have a serial number in order to prevent their being traced.

Excess arms that were mainly the result of military budget cuts in producer countries since the early 1990s have forced these countries to seek ways to rid themselves of this surplus. The enormous surpluses accumulated by certain armies (DeClercq, 1998)³⁰ have led to the market being flooded with resold military arms and ammunition featuring various markings, and their origins often unknown. It is relevant to note that Eastern European countries and the former Soviet republics supply a significant amount of surplus small arms and ammunition (GRIP, 1997), sometimes in violation of embargoes and usually inadequately marked. These are often transferred through the illicit market and seriously undermine efforts to limit legal transfers. These arms and ammunition are thus often recycled from one conflict to another. For example, after the end of the civil war in Mozambique, small arms were redistributed to neighbouring countries, particularly in the Great Lakes region and South Africa.³¹ They can also be found on the civilian market in the hands of criminals (Ezell, 1988).³²

Until a few years ago, efforts to control arms had overlooked the small arms issue, focusing instead on major, nuclear and chemical weapons. The proliferation and lethality of tens of thousands of small arms in wars today have pushed governments, NGOs and regional organizations to seek ways to control them. Regional 'codes of conduct,' agreements and moratoriums have been established, but have not been implemented correctly in practice. Their practical implementation would require new control mechanisms, which must inevitably involve marking arms to enable them to be traced. For the time being, however, state-to-state transfers are free of legal requirements and relatively few measures have been adopted. For example, a state is not required to have an import license if it is the direct buyer (importer). The only international control that currently applies to the military market is compliance with UN embargoes, imposed mainly in response to violations of humanitarian law.

National security interests often take precedence over humanitarian matters, however (Pace, 1997).³³ Some governments authorize arms exports to other

governments or rebel forces based on national or trade interests, without export license or end-user certificates. In most cases, these transactions are kept secret and the international community is unable to verify their existence. Countries neighbouring regions in conflict often provide assistance to one or the other warring side, according to their own national interests (UN, 1998/1).³⁴

Today, the effectiveness of most embargoes has been weakened by governments' direct or indirect engagement in internal wars noted for significant humanitarian law violations by selling arms to belligerents or to intermediary 'end-users'. The American NGO Human Rights Watch (HRW) denounces the involvement, whether deliberate or not, of governments in the abuses committed during these conflicts (Hiltermann and Bondi, 1999). For the time being, however, given that there is still no reliable system for tracing arms, it is difficult to determine responsibility, from a legal point of view, among governments and other players involved. Moreover, arms move easily across borders, whereas laws aimed at controlling them are restricted to one country and no longer apply once a weapon has crossed into the territory of another. Furthermore, international investigations, if any, are extremely slow and cannot apply to all the various players. HRW researchers have found that the effectiveness of a UN embargo suffers when states violate it, as happened with France in

30. For example, the US army has over 5 million metric tons of ammunition, explosives and missiles valued at about USD 80 billion, most of which is excess stock. They have 517 times more 0.30-calibre ammunition than they need. See GAO report: GAO/NSIAD-96-129, <http://www.gao.gov>.

31. For a more comprehensive study of illicit arms movements in southern Africa, see Chris Smith and Alex Vines: 'Light Weapons Proliferation in Southern Africa,' Centre for Defence Studies, *London Defence Studies* No. 42, November 1997.

32. For example, in the United States some criminals have been caught with small arms that were left in Vietnam and Cambodia by US soldiers. There are an estimated 2.1 million of such weapons.

33. The US House of Representatives adopted a code of conduct restricting arms transfers in June 1997, which has yet to be ratified by the Senate. However it authorizes the President to bypass the ban on arms transfers to non-democratic countries for reasons of national security.

34. In spite of the UN arms embargo, ex-FAR and Rwandan Interahamwe have continued to receive small arms from the Democratic Republic of Congo government and its allies, the Angolan, Namibian and Zimbabwean governments. Another well-known example is the Ugandan government's small arms supply to the Rwandan Patriotic Front (RPF) when the RPF tried to invade Rwanda in 1990.

Rwanda,³⁵ the United States in Bosnia-Herzegovina, Great Britain in Sierra Leone, and Tanzania and Uganda in Burundi (Hiltermann and Bondi, 1999). Arms from former Soviet republics were found to have transferred through Ostend, Belgium, to Burundi (GRIP, 1997).³⁶ False end-user certificates often accompany these illicit transactions (UN, 1996/2).³⁷ In September 1998, Warsaw officials revealed that Polish surplus weapons destined for the Baltics were diverted to Somalia, Croatia and Sudan using a false Latvian end-user certificate (Dragsdahl, 1998).

Arms are also sent as 'gifts' to allied paramilitary groups operating on national territory or in foreign countries. The recent examples of Rwanda, Democratic Republic of Congo, Indonesia, Colombia, Mexico and Ex-Yugoslavia are well known.³⁸ Such transfers are extremely difficult to trace since army stockpiles cannot be verified by outside sources.

Only a few states provide information on small arms and ammunition exports to their public or parliament. The United States, for example, has reported its exports and export license approvals since 1996, with the exception of secret arms supply operations.³⁹ provide such information. Comprehensive information is needed, however, in order Canada, the Netherlands, Norway and Sweden are among the few countries that report on their small arms exports, although the degree of transparency varies considerably even among those who that governments may verify that the arms they export are used in compliance with the certificates they deliver. To date, producer states have paid little attention to how the arms and ammunition they sell, and for which they have a certain responsibility, are used. For instance, the US Department of State's Office of Defense Trade Controls only verified 21 out of the 1632 license requests for small arms to be delivered to Latin American countries from 1989 to 1993 (Klare and Andersen, 1997).

It is a fact that small arms are not of strategic importance for the security of states. They are not a decisive element in modern inter-state wars, and the risk of a war erupting due to their presence is minimal. Transparency in the manufacture, export and stockpiling of small arms and their ammunition would therefore not pose a threat to the national security of states (Krause, 1999; Lumpe, 1999).

On the contrary, knowledge about other countries' arsenals should enhance security. While small arms clearly engender a human cost, major exporting countries seem more concerned about increasing economic and employment-related profit than decreasing the number of lives lost due to arms transfers.

In intra-state wars, small arms are mostly of military origin, despite the fact that they are used by both civilians and the military. Also, even in the absence of civil war, state security forces often harass citizens in order to discourage dissent and secure the regime in power from potential threats (Rummel, 1994; Legar-Sivard, 1996, pp. 18–19).⁴⁰ The verification by third parties of these human rights abuses is almost always impossible on the grounds of state sovereignty. Introducing a human dimension to the small arms problem could result in a change of priorities and impose sanctions on those responsible for abuses.

Theft from security force warehouses is also a serious problem. As conflict was brewing in Albania in the spring of 1997, civilian insurgents stole about 750,000 arms from army stockrooms and transferred some of them illicitly to Kosovo and Macedonia. After the NATO raids, some of these arms were reportedly resold elsewhere, namely in Western Europe⁴¹, by KLA members preferring to make a profit from their arms than hand them over to the KFOR peacekeeping force in Kosovo. It is

35. In Rwanda, the 1994 genocide was exacerbated by the presence of small arms which kept civilians at bay while protecting killers. These arms were mainly supplied by France in the context of assistance to Rwanda.

36. *De Morgen*, 4 January 1997; *Le Soir*, 6 January 1997; *Reuters*, 17 March 1998.

37. In its report of 14 March 1996, the UN Commission of Inquiry for Rwanda investigated deliveries of 80 metric tons of rifles and ammunition from Seychelles to Rwanda using false Zaire government end-user certificates. The Commission was unable to pinpoint culpability of the players involved due to a lack of cooperation on the part of the governments concerned.

38. Examples include arms transfers from Yugoslavia and Croatia to Serbs and Croats in Bosnia-Herzegovina during the Bosnian war, and transfers from the Hutu-dominated Rwandan government to Interahamwe and Impuzamugambi militia.

39. According to annual reports of the 'Commerce, State and Defense Department', in 1996, over USD 590 million in small arms were approved for export.

40. It is estimated that in the 20th century, over 170 million people were killed by their state security forces, compared with 110 million who died in inter-state wars since 1900.

41. *RTBF*, 7:30 p.m. TV news, 16 August 1999. The arms are said to flow mainly to Germany and Great Britain.

estimated that 500,000 of these stolen weapons are still in civilian hands within Albania, where violence is rampant (Laurance, 1998, pp. 39–40).⁴² In countries afflicted by internal conflict this happens rather frequently and is facilitated by corruption among officials. Of course, responsibility for such theft is rarely pinpointed or sanctioned given the absence of outside control, even in industrialized countries.⁴³ In South Africa, security forces possess as many as 5 million weapons, most of which are located in rural areas and are very poorly controlled (Laurance, 1998). Regular state-to-civil society arms leaks are a serious problem in this country and contribute to the alarming increase in violent crime.

Box 3.1 The Cost of Conflict

The number of wars, past and present, increased from 10 in 1960 to 50 in 1993, at which time there were 20 million refugees compared to 2.5 million in 1970 (Concolato, 1994). In 1993, the United Nations conducted 26 missions affecting some 59 million people (Duffield, 1994). Eighty per cent of emergency situations are ‘man-made’ and increasingly involve violence due to the presence of increasingly sophisticated and easily accessible arms. In these conditions, emergency assistance is extremely costly. Peacekeeping operations cost the United Nations USD 3.2 billion in 1993 alone (Duffield, 1994). The portion for emergency assistance in Great Britain’s Overseas Development Administration budget increased from 2 per cent in 1982 to 10 per cent in 1992 (ODA, 1993). For UNICEF, this portion rose from 7 per cent in 1987 to 23 per cent in 1993.⁴⁴ In 1995, the European Community Humanitarian Office (ECHO) spent 700 million ECU on humanitarian aid.⁴⁵ Humanitarian operations in conflict situations are costly: the international community supplied over USD 1.6 billion to Cambodia from 1976 to 1993 (Concolato, 1994). The civil war in Mozambique caused 1,500,000 casualties from 1980 to 1992, resulted in a loss of USD 20 billion of the country’s GDP and excluded 50 per cent of the population from production networks.⁴⁶

Emergency assistance is growing and impedes development through a misappropriation of budget funds. The solution would be to apply an effective conflict prevention policy, a major component

of which would involve controlling the flow of arms that contribute to and exacerbate conflicts. This prevention means intervening at the outset of the chain and controlling each of its links. Preventive action will never be as costly as emergency operations, saying nothing of the human cost which is difficult to quantify.

The civilian market

Compared to the military market, laws governing the civilian market are usually stricter, but more varied depending on the country. There are no internationally recognized standards for the legitimate and legal possession of weapons, and thus no international harmonization either. Although registers are maintained in every country, many arms go unregistered either because of loopholes in the law, or because the illicit market is well developed. In France there are an estimated 14 million firearms in civilian hands, of which only 6.5 million registered (4.5 million hunting firearms and 2 million sporting rifles).⁴⁷ In Belgium, an estimated 2 million firearms, only half of which are registered, are in the hands of civilians. The second-hand market is impossible to control since reporting sales is rarely obligatory, or when it is, as has been the case in Belgium since 1991, it is left to the vendor’s goodwill to do so. This ultimately means that some sales go undeclared. Some sources believe that the real number of lost or stolen arms is much higher than statistically reported because victims do not always report incidents to the police.⁴⁸

42. Judges are overwhelmed by the number of armed assaults and penalties are light. A young person firing shots in the street ‘for fun’ was fined 40 Euros. Unprotected, judges fear for their own lives (*Euronews*, 9 December 1999).

43. For example, on 23 June 1999 in Mons, Belgium, about a thousand guns belonging to the Ministry of Justice were stolen from non-secured warehouses. Ministry authorities were unable to provide an explanation and the thieves were never identified.

44. ‘UNICEF Response to Emergencies,’ UNICEF, New York.

45. *ECHO en un coup d’oeil* [ECHO at a Glance], ECHO, 1996.

46. Reginald H. Green and Maria Mavie, ‘From Survival to Livelihood in Mozambique,’ *IDS Bulletin*, vol. 25, No. 4, 1994, pp. 77–84.

47. Television programme, ‘La Marche du Siècle,’ *France 3*, November 1998.

48. Carlos Fernandez, ‘The Role of Manufacturers and Dealers’ in ‘Curbing Illicit Trafficking in Small Arms and Sensitive Technologies: an Action-oriented Agenda,’ UNIDIR/98/16, UN, Geneva, 1998.

Moreover, very few countries require the centralization of professional arms dealers' stocks in a private or state register. Given the significant number of arms dealers⁴⁹ and the number of small arms in circulation in the world (Cukier, 1997),⁵⁰ the difficulties in keeping even approximate inventories are obvious. The various countries' registers are thus far from complete or reflecting the real situation. Information is neither centralized nor exchanged within a country or between countries; it remains fragmented. In addition, for reasons mentioned above, the act of marking arms alone is not sufficient to trace them to their source. Even when the origin of civilian arms is known, their path is nearly impossible to trace because transactions are not registered and registers are not centralized. Certain military arms that are recycled to the civilian market further complicate arms tracking and tracing as well as the identification of responsibilities. All of this clearly shows that existing legislation is insufficient. In many countries, the laws concerning the possession of firearms by civilians are vague and have not progressed in parallel with advances in arms technology, most notably in terms of their lethality. Even in developed countries, there are often problems regarding the application of the law.⁵¹ Control structures should be reinforced particularly in countries subject to conflict.

Box 3.2 A Public Health Problem

A few statistics help illustrate why this problem should be tackled before it reaches a scope beyond all control:

- The presence of a weapon in the home makes suicide 4.8 times more likely to occur, and homicide or accidents 2.7 times more likely to occur than in a gun-free home (Chapdelaine, 1997).
- United Nations' studies conducted in 30 countries revealed that each year firearms caused over 200,000 deaths, whether by murder, accident or suicide.⁵²
- In the United States, where 71 per cent of homicides and 61 per cent of suicides involve firearms, firearms caused 39,595 deaths in 1993 (15.6 per 100,000 persons) (Krug, Powell and Dahlberg, 1997). In 1992, out of 37,776 arms-

related deaths, over 5,000 victims were persons under 19. That same year, 61,300 people were hospitalised due to firearms-related violence (Miller and Cohen, 1997). While these figures have recently started to decrease (over 34,000 deaths in 1998), there are still as many firearm victims every 18 months as the total number Americans killed in the Vietnam War.

- In Canada, firearm deaths are the third leading cause of death among young people aged 15 to 24 (Cukier, 1997).

- The 134,000 firearm-related injuries in the United States in 1992 cost USD 40 billion in the form of medical treatment, public service and unemployment (Miller and Cohen, 1997). If we add to these estimates the loss of quality of life, the figure increases to USD 126 billion, or USD 495 per US resident.

- Sales in arms and ammunition on the US civilian market amounted to USD 2.9 billion in 1993. One could compare this with the USD 3 billion spent on medical expenses for firearm-related injuries alone (Miller and Cohen, 1997). Thus, the money made from the sale of firearms far from sufficiently cover the expenses they engender in public health.

- In Canada, economic activities related to firearms are valued at about 1 billion Canadian dollars (CDN), while the annual cost linked to the injuries they cause (about 1,000) and deaths (about 1,400) is estimated at CDN 6 billion per year (Cukier, 1997).

- Studies in Australia, Canada, Great Britain and the United States reveal that 92 per cent of the variance in death rates could be explained by the degree of access to firearms in those areas (Gabor, 1994). A number of studies undertaken in

49. In the USA there are 6,000 arms dealers in the four states bordering Mexico alone. See 'Mexicans Too Have a Problem Border: Awash in US Guns,' *Christian Science Monitor*, 11 April 1997. In Belgium, there are about 1,000 (per a telephone conversation with a Seraing (Belgium) BSR manager, 11 April 1999).

50. In the USA, of a population of 263 million, 223 million firearms were in civilian hands in 1995.

51. Controls of arms and licenses, for instance, should be conducted by qualified personnel. Given the number of existing firearms and lack of regulations concerning marking and tracing, it is practically impossible for officials to have the personnel and time required to undertake adequate controls.

52. United Nations, *International Study on Firearm Regulation (Revised)*, 1997, Tables 6.2 and 7.1.

several countries reveal a strong correlation between gun ownership and the overall homicide and suicide rates, as well as armed assaults (Cukier, 1998; Krug, Powell and Dahlberg, 1997).

- Studies conducted in 36 countries over a one-year period reported 82,465 homicides (6.9 per 100,000 people) and 130,546 suicides (10.9 per 100,000 people). Firearms were used in over half of homicide cases in Northern Ireland (86 per cent), Italy (74 per cent), Brazil (56 per cent) and Greece (51 per cent) (Krug, Powell and Dahlberg, 1997). Moreover, the highest death rates involving firearms are in Brazil, Estonia, Mexico and the United States. Most deaths involving firearms in Europe and Oceania are suicides (69 per cent and 80 per cent, respectively).⁵³

- In Rio de Janeiro, the firearm-related death rate is extremely high (58 per 100,000 people whereas the average for all of Brazil is 17). Statisticians attribute this to the increasing involvement of young people in the drug trade, and their use of weapons. In the 1990s, the police seized an average of 7,000 arms each year from young people (Fernandez, 1999).

- In Colombia, the demand for firearms is directly related to the extremely high levels of crime and social violence. In 1996, 26,510 homicides were committed, or 67 per 100,000 people, the highest rate world-wide after El Salvador (Fernandez, 1999).

In some countries, such as in Central America, civilian access to military-type firearms contributed to making crime the most serious social problem. The increased lethality and firepower of these arms incites criminals who are sometimes better equipped than security forces. The abundance of these arms among civilians, particularly in countries where governments distributed them to citizens, fosters a culture of violence. Coupled with weak state authority, this has enabled private militias and street gangs to emerge. For example, in Guatemala there seems to be a close correlation between the distribution of arms to civil patrols in the 1980s and the high crime rate of today, years after the civil war has ended. During peacetime, therefore, civilians sometimes face even more armed violence than during times of conflict.⁵⁴

Ammunition

Most states do not require private individuals to obtain a license for the possession or import of ammunition, but there are often quantitative limits at the point of purchase. Ammunition for personal use can be stocked and transported without special permission up to a certain quantity, depending on the country⁵⁵ (DeClercq, 1998). No register exists for the sale and possession of ammunition. In most countries, sellers are asked to note the purchaser's name and address and quantity and type of ammunition purchased. Note that the user can purchase powder and empty cartridges and stock them to prepare ammunition as needed. Handloading, initially intended for sporting and hunting competitions, is widely practiced for self-protection, particularly in North America. Devices that can reload from a few hundred to thousands of bullets a day cost USD 145 to 355.⁵⁶ The absence of marking makes it impossible to determine the origins of ammunition used in crime.

5.56mm, 7.62mm and 9mm calibre ammunition for assault rifles are widely used in civilian firearms and are thus produced and distributed both on the civilian and military markets. The illicit civilian market also carries AD and AG arms that are reconverted to automatic after having first been converted to semi-automatic to enable their sale on the legal market. This gives an idea of how confusing it can be to trace ammunition circulating among civilians. One solution would be to ban the use of these calibres, but this would require a global agreement involving every country that produces ammunition as well as the harmonization of corresponding laws (DeClercq, 1998).

53. For a more in-depth study of the correlation between firearms possession and the mortality rate linked to these arms, see Sophie Nolet, 'La détention d'armes à feu par les civils' (Civilian Firearm Possession), *Les Rapports du GRIP*, No. 2000/1, May 2000.

54. South Africa is a prime example. For a more comprehensive perspective on problems of post-conflict crime, see Edward Lurance, *op. cit.*

55. Canadian legislation on sporting explosives and ammunition allows up to 10kg of explosives to be stored in a residence and up to 25kg to be transported in a private car.

56. See <http://www.huntingtons.com/>

3.2. The Situation in Belgium

3.2.1. Legislation

Belgium provides an interesting case study because it is relatively representative of the direction in which legislation in numerous countries is moving, particularly in Europe.

Law on the trade in arms and ammunition for military use⁵⁷

To practice the trade in military arms, it is obligatory by law to obtain a license from the Economic Relations Department of the Ministry of Economic Affairs. For export and transit, the license request must include an end-user certificate whereby the user commits to supply proof of import of the product and cannot re-export it without authorization from the Belgian authorities. The license request is rejected if the transaction seriously infringes Belgian interests or could contribute to human rights violations (Art. 4 of the law). The same applies if the recipient country is involved in a civil war, has serious internal tensions, if its government supports terrorist activities or if it has been known to fail to comply with the non-re-export clause. Nevertheless, the non-observance of one of these clauses does not always lead to a refusal and authorization depends on the Minister responsible, who also takes into consideration other commercial and diplomatic factors.⁵⁸

The Government reports annually to the Parliament on the application of the law (Art. 14).

Finally, while it mostly addresses civilian rather than military arms, the law of 3 January 1933—amended by the 20 September 1991 law and analysed in further detail below—is the only legislation governing military material. Laws on overseeing and controlling military arms are lacking.

Comments

1) *Final end-user*

While the law concerning a firearm's destination is relatively strict, its application remains problematic. In spite of possible embassy controls, it is difficult to verify the authenticity of documents such as end-user certificates, customs documents or proof of import of goods (to be supplied within six months) (Maréchal, 1998, pp. I–128, 136).

Moreover, the latter document can sometimes be substituted with an attestation of consumption.

Once an arm is exported, moreover, the exporting country—in this case, Belgium—barely has any control over its destination. The law does not allow any possibility to verify whether a firearm is in actual fact in the hands of the original importer, or at least not for the duration of its existence. Military secrecy makes it particularly difficult for embassies to track the arms its country sells. Controlling resale, particularly within the country itself, is often quite tricky. As for non-monetary transfer arrangements between different entities, such as when the army supplies paramilitary groups, are impossible to verify.

2) *Recipient countries*

Suspicious can arise with regard to recipient countries. Some countries have served as springboards for arms transfers, legally receiving goods and rapidly shipping them again to countries under embargo (Maréchal, 1998, pp. I–134–135).⁵⁹ Arms traders in these scenarios act as screens to by-pass the bans.

It is nearly impossible to predict the evolution of a country's internal situation and foreign policy over a long period of time. Given the durability of small arms and ammunition, it is difficult to ensure these will not infringe recipient country criteria years down the line.

Furthermore, the list of 'banned' countries is not made public, which is disadvantageous for exporters who can not know in advance that some of their license requests will be denied. This means that they may invest in activities that will subsequently be refused by the authorities, thus constituting a waste of time and resources.

57. Law of 5 August 1991 on the import, export and transit of arms, ammunition and material specifically for military use and related technology (*Moniteur Belge*, 10 September 1991).

58. For example, the Belgian Foreign Minister authorized the export of FN P-90 rifles to Mexico in May 2000. This led to a heated debate in Parliament. In light of the delay and offence caused, Mexico finally cancelled the order.

59. During apartheid, for example, Belgium could not sell arms and ammunition to South Africa, but clients from other countries ordered this material from Belgian manufacturers and resold it to South Africa (telephone conversation with a MECAR representative on 18 September 1998).

Finally, the application of Article 4 criteria regarding human rights violations and internal tensions in the purchaser country can be lax. For example, Belgium's small arms sales to Indonesia were suspended only in 1998/99. These sales amounted to BF 53 million in 1997 and BF 84 million in 1996, mainly for FN origin ammunition. In spite of the disturbing situation in Indonesia in 1998, Belgian exports increased to BF 72 million.⁶⁰

3) *Identifying and sanctioning offenders*

At present, no international organization can impose regulations on governments, nor can any legal jurisdiction sanction arms-related offences.

This means, for instance, that if the non re-export clause has been infringed, the buyer country does not face any particular legal sanction. The most that can be done is to deny an export license for any subsequent transaction. Also, Belgian law does not directly penalise violations of UN-imposed embargoes (Maréchal, 1998).

As per the general law on customs and excise duties, no legal action can be taken against manufacturers and exporters with the exception of breaches at export.

As a general rule, the difficulties of tracing a firearm once sold engenders a dilution of responsibilities and contributes to the impunity of the offenders.

4) *Marking and tracing*

The law does not address the marking of arms or ammunition. Buyers and sellers are free to attend to this matter as they see fit, as there are neither constraints nor controls. Moreover, transactions are not registered and remain secret.⁶¹

Verifications concerning the respect of use clauses during transaction and subsequent controls can only be conducted if (1) the objects are adequately marked, and (2) they are registered in records accessible to all officials concerned and updated at each transaction.

It should be pointed out that current law no longer provides for the physical control of such weapons after shipment. During export, customs officials check documents, packaging and type of good without worrying about markings or possible subsequent controls (tracing).

Nevertheless, recipient country and end-use clauses only make sense if there are post-export controls, which would require arms to be marked and transactions to be registered. Today, the law is mostly centred on verifications prior to the transaction, not after. This means that the accountability stops where it should really start, since the practice begins only after delivery. Current legislation is incomplete and does not take into account the consequences of what it authorizes and over which it has no control.

Recommendations for improvement

(see also Adam, 1999/1)

1. Given the importance of marking and tracing in the control of arms and ammunition transfers, until a universal system is adopted internationally, Belgium should in the meantime establish a unique, effective and obligatory marking system. A national electronic register should collect data on arms that are possessed, exported, imported or sold on national territory, including firearms destined for the civilian market.

2. Once an adequate marking and record-keeping system is applied, sanctions can be foreseen for offences committed outside Belgium,⁶² aimed on the one hand at countries failing to comply with the non re-export clause and on the other at Belgian nationals and companies guilty of offences outside of Belgium.

3. License acquisition criteria, defined in Article 4 of the law, should be re-examined with a view

60. '1998 report on Belgian arms exports.' Statistical data on military material are compiled by Belgium's National Bank but are covered up due to the secrecy constraints in Article 458 of the Penal Code. To guarantee confidentiality of the statistics, the data is grouped by country and merchandise codes.

61. Even after antipersonnel landmines were banned, the authors were unable to obtain information from the authorities responsible for mine exports from Belgium in the period preceding the ban. The information would have been used to identify mine export destinations and quantities in order to find and destroy them. These mines are thus virtually untraceable.

62. The general law on customs and excise duties contains clauses sanctioning only violations committed in Belgium (law of 11 September 1962) and applicable to Belgian entities. A bill amending the 5 August 1991 law sanctioning all arms embargo violations and making it possible to bring all such violations before the courts in Belgium, even if committed in another country, was filed by Member of Parliament Dirk Van der Maelenon on 9 February 2000.

to rendering it more explicit, and more weight should be attributed to human rights considerations. Other criteria should be added, such as banning the sale of arms to countries that are excessively armed or where military spending far outweighs its requirements, and taking the stability of the recipient country's region into consideration.

4. The definition of arms in the current law should include all material intended for security forces and should be registered in a database.

5. Since the use of licenses to produce arms and military material cannot be controlled once sold to another country, an outright ban on transfers of production licenses to third countries should be considered.

6. The law should clearly define specific guidelines for end-user certificates and delivery verification certificates, the formats of which should be standardized.

7. To fight against fraud and trafficking, an accreditation system for the identification and registration of sellers and intermediaries could be established.⁶³

8. To improve transparency in arms exports, Belgium should follow the examples of Finland, Sweden and the United States which publish annual reports containing figures and quantities relating to sales in small arms and ammunition, divided by category and recipient country, and also indicating those sales which were denied along with the reason for denial.⁶⁴ A parliamentary committee should be able to state its opinion on each export license allocation and publish a list of 'banned' countries based on Article 4 criteria.

9. The validity of export licenses should be limited, for instance to six months, and unused licenses should be returned to the administration within a month after expiration.

Law pertaining to the manufacture, trade and possession of arms and the trade in ammunition⁶⁵

This law mostly addresses private citizens and sales to private citizens. It is quite detailed and comprehensive, but contains some loopholes, particularly as regards control of its application. An in-depth examination of this law is beyond the framework of this report, but the following points show that stricter controls are possible through

marking and registration of small arms and ammunition to enable reliable tracking.⁶⁶

Comments

1) Professional dealers

Arms dealers do not have to meet any specific professional requirements to pursue their activities,⁶⁷ and it is relatively easy to become a seller. Moreover, controls of professional dealers are carried out by local municipal police, who are not properly trained for this task.⁶⁸

Professional arms dealers' registers are not centralized and are accessible only when a check is conducted within their establishments, and records are kept in archaic handwritten rather than electronic form. According to a *Brigade de Surveillance et de Recherche* (BSR) officer in Seraing, Belgium, controlling stocks would require too great an investment in terms of personnel.⁶⁹ Therefore, even if stock control and monitoring were required by law, it would be impossible in practice. Unless there is a specific request or investigation, arms dealers' registers go unchecked. The same officer has suggested to the Ministry of Justice that dealer stocks be computerized so as to enable regular checks that would require them to send monthly register abstracts to the communal administration, but the suggestion has yet to be addressed. The officer also said that the difficulty in tracking enables dealers to omit a portion of

63. This type of measure is being studied within the UN. See Chapter 6 of this report.

64. A bill concerning reporting was filed on 15 October 1999.

65. Law of 3 January 1933 (*Moniteur Belge*, 22 June 1933) and Royal Decree of 20 September 1991 concerning its implementation (*Moniteur Belge*, 21 September 1991).

66. At present, a project for the improvement of the law and its application is being studied by the Ministry of Justice and will be presented to the Parliament in Spring 2002.

67. The Belgian Minister of Justice said he was considering the establishment of requirements (*RTBF*, 7:30 pm evening TV news, 15 November 1999).

68. Authors' interview with a Belgian Foreign Affairs Ministry official (23 July 1998) and with a *Gendarmerie* official from Seraing, Belgium (13 April 1999).

69. According to this officer, it took two months to control an arms dealer in Mons. With many registers to check, it can take hours to track down a single firearm. It is thus not possible to carry out regular controls of dealers (authors' interview of 9 April 1999).

second-hand arms purchases from their records.⁷⁰ This has resulted in some arms originally resold by the authorities being re-seized on the illicit market.

Moreover, officials interviewed by the authors noted that arms dealers do not usually register arms that do not have serial numbers.

It should be noted that dealers who fail to register arms in their possession are technically subject to sanctions under Article 17 of the law of 3 January 1933. They cannot be sanctioned under this law for falsification or use of falsified documents by omission, however.⁷¹

Furthermore, arms dealers can produce arms using parts from their stocks or from re-purchased arms. They are under no obligation to number and declare these arms.⁷² Authorities can only track the existence of arms if these and their parts are kept in centralized electronic records.

2) *Hunting and sporting firearms*

The definition of a hunting or sporting firearm is broad, encompassing arms which do not fall under the categories of AD and AG arms⁷³ or panoply weapons (Article 3 of the 1933 law).

Repeating-fire AD or AG arms that are converted and rendered semi-automatic can only use ammunition for hunting or sporting firearms, and are thus considered to fall under the same category. However, technically, this conversion is reversible even if illegal, and verifying the application of this ban is impossible in practice.

Furthermore, a hunting or sporting license is all that is required to carry or possess an unlimited number of hunting or sporting firearms. The possession, transportation and use of such arms, while regulated, is uncontrollable in practice and dependent on the good faith of users. Moreover, there are no regulations concerning the safe storage of these firearms, which are in fact regularly stolen and accessible to persons in the owner's immediate entourage.

The only requirement concerning the resale of these arms between private individuals is for the purchaser to present his or her identification to the reseller, whom in theory, should send this information to the municipal administration. Failure to comply with this requirement renders control impossible and can only be detected after a serious violation, when it is too late. The purchaser,

moreover, is not required to check the origin of the arm. Since the Royal Decree of 20 September 1991, spontaneous declarations should be made to the municipal police, which automatically delivers a certificate of possession. A certain number of transactions can therefore go undeclared, rendering any after-the-fact tracing practically impossible.

Failure to declare these firearms is deemed to be a violation only if they were purchased after 1991. Obviously, this is difficult to prove for the resale of arms manufactured before 1991.

3) *'Armes de défense et de guerre' (AD and AG arms)*

All that is required for sports enthusiasts to be able to carry and transport AD or AG (semi-automatic) arms between their residence and a sports club shooting range⁷⁴ is a declaration of use at such a shooting range. According to information obtained by the authors, a considerable number of sport enthusiasts keep their arms at home and loaded for self-protection. Also, in the event that the original and legitimate justification for possessing arms no longer applies (for example because a sport shooting enthusiast has stopped practicing), there is no way for the administration to know this.

4) *Marking and registration*

Paragraph 4 of Article 28 of the law of 3 January 1933 provides that firearms and their parts be numbered. However, at the time of publication of this report, the Royal Decree to enforce this paragraph had yet to be published! There is therefore still no obligation nor any official technique for numbering arms. Officials are said to be waiting for an international convention, at least at EU level, that would require the numbering of arms so as to

70. The *Administration des Domaines* (AdD), for example, regularly sells thousands of seized and surplus security forces and police arms on the basis of offers from arms dealers. If a hundred or so firearms are not registered, and show up on the illicit market later on, it would be extremely difficult for the police to determine their origin. Based on interview with the Seraing (Belgium) BSR official, *op. cit.*

71. Ruling of the 14th Brussels *Chambre de la Cour* (Court) of 19 January 1989; see Christian Maréchal, *op. cit.*

72. Television debate, 'Mise au Point,' *RTBF*, 16 April 2000.

73. Translator's note: see Section 2 above on definitions.

74. The shooting range is where marksmen stand to shoot and reload their firearms.

avoid having to start from scratch.⁷⁵ Another problem concerns the numbering of replacement parts, which would differ from those on arms already made or in circulation.⁷⁶ In the absence of new measures, tracing cannot be reliable.

Individuals who acquire an arm that is not numbered can decide whether or not to assign it one, which means that some registered arms do not have a serial number.

Administrative information⁷⁷ on certificates for the holding or possession of various firearms by private individuals, as well as civilian use registration documents and European firearms passes,⁷⁸ are kept in the *Registre Central des Armes* (RCA, Central Arms Register) which was established by the 8 April 1989 Royal Decree to help authorities manage documents. Unfortunately, the register neither contains any information on arms dealers' stocks nor reflects all of the arms that civilians have in their possession.⁷⁹ Furthermore, there are no provisions for tracking elements contained in the registry.

According to a *Gendarmerie* official, most people who possessed certain automatic weapons, such as 'riot guns', prior to the 1991 amendment fear the police would seize them if they were to declare them now.⁸⁰

Lastly, legal texts do not provide that registers be kept in electronic form.

5) Ammunition

There are no legal provisions concerning the marking or registration of ammunition.

Ammunition for hunting or sporting firearms can freely be acquired, possessed and carried, even if these weapons are converted AD or AG arms. In such cases, certain types of ammunition for these particular weapons can be purchased without restraint. For example, 0.22 calibre ammunition can easily be used either on rim-fire AD arms or 22 long rifles for hunting.

Ammunition that is mostly meant for military use, such as 9mm, 7.62mm and 5.56mm calibres are also used with civilian arms.

Recommendations for improvement

1. As suggested by the 5 August 1991 law, a system for unique marking of small arms and ammunition should be adopted by implementing

Article 28 of the 3 January 1933 law on numbering arms, and by widening the scope of application to ammunition and including other information needed for identification such as origin, date of manufacture and batch number.

2. The RCA should be completed in compliance with the new system and include all arms in the hands of both civilians and arms dealers. The latter's stocks should be computerized and centralized so as to comply with the RCA.

3. The holding and possession of any arm, including hunting and sporting firearms, should require a license. Hunting and sporting firearms should be precisely defined.

4. The conversion and resale of AD or AG arms for hunting or sport should be banned.

5. Following the example of the Canadian law which came into force in December 1998, arms possession and storage by private citizens should be regulated. Arms in storage should neither be loaded nor accessible to others. Just as in Great Britain, sporting firearms should be left in sporting clubs' safe storage facilities. Hunting rifles should be kept in communal storage areas related to the activity, not in people's homes.

6. Resale between private individuals should first be authorized and registration in the RCA mandatory, since relying on voluntary declarations can lead to deviations that are impossible to control.

7. Resale of excess military arms on the civilian market should be banned. Arms that are seized

75. Explanation given by a Ministry of Justice official during an interview with the authors on 23 March 1999.

76. Explanation given by a Liège *Banc d'Épreuves* official during an interview with the authors on 13 August 1998.

77. According to the register, of the 332,335 persons listed in Belgium in January 1999, there were 10,513 licenses to hold arms, and 474,296 defensive arms, 103,760 hunting and sporting rifles, and 15,407 military-style arms were in the hands of private individuals.

78. This pass is required in order to carry arms within the EU. However, as is the case with national laws, European passes vary from one country to the next.

79. RCA figures are far from reflecting the estimated 2 million arms circulating among civilian hands in Belgium (*La Libre Belgique*, 29 March 2000). Nevertheless, despite a drop in arms dealer sales, 1,000 license requests are registered each month, suggesting that a portion of these arms could have been acquired from unofficial sources (*VRT*, 7 p.m. evening TV news, 29 March 1999).

80. Authors' interview with a Seraing, Belgium, BSR official, 9 April 1999.

should be destroyed, not recycled onto the civilian market or stored.⁸¹

8. Experts should periodically conduct regular controls of arms dealers and private citizens.

9. Ammunition should be marked and registered in the same way as small arms. The sale of ammunition for all categories should be controlled⁸² and their storage should be regulated and monitored.

10. Arms produced by arms dealers should be regulated and strictly controlled.

Finally, a twofold initiative of the Governor of Brussels should be pointed out. This concerns a bill covering all 120 laws or Royal Decrees applying to firearms that would simplify legislation and fill any gaps, as well as the establishment of a central bureau for the suppression of arms trafficking to centralize information and control arms trading and trafficking. This initiative has yet to be concretised, however.

3.2.2. Control mechanisms

There are no official controls for marking small arms and ammunition at manufacture or sale, whether these are intended for the domestic market or export, nor is there an official register for keeping records of manufacture or sales. Moreover, information in manufacturer and dealers' registers is not centralized.

Consequently, only information pertaining to holding and possession licenses of civilians registered in the RCA are accessible to certain national authorities, such as ministries of justice and internal affairs and the police and *Gendarmerie*.⁸³

Since imports and exports are subject to the licensing system, data relating to these transactions is kept by the ministry of foreign trade and is confidential. Also, since unused licenses are not returned to the Ministry, actual transactions do not correspond with the licenses issued.

Given these conditions, it is difficult to try to trace the circulation of an arm and pinpoint responsibility, particularly for international transactions. This is a time-consuming procedure and officials whom are questioned do not always cooperate. In the meantime, transactions on the illicit market are extremely rapid and the channels are in constant movement. There is therefore a major lapse in time between the illicit transaction and the results of a potential after-the-fact investi-

gation, thus enabling traffickers to always stay several steps ahead of the game. Controls prior to transactions should therefore be strengthened or new ones established. The following section will evaluate existing controls to determine whether they can be improved upon.

The *Banc d'Épreuves*

In Belgium and in twelve other countries, small arms intended for the civilian market (calibres of less than 35 mm) are quality-controlled for security purposes by the *Banc d'Épreuves* (BE), or proof house, and stamped with a compliance proofmark. A proofmarked arm is approved in the thirteen countries whose proof houses constitute the Permanent International Commission of Small Arms (*Commisson Permanente Internationale, CIP*).⁸⁴ Any arm produced or imported in these countries is subject to CIP testing and proofing. This proofmark does not enable subsequent identification of an arm, however; it only guarantees that it has passed through Belgium and has been quality-approved.

It should nevertheless be pointed out that the BE does check firearms for serial numbers, and when these are missing, stamps a new number preceded by 'BEL' for its own administration's record-keeping. This register was converted into electronic form in 1990.

The BE also checks confiscated, seized or decommissioned arms for which the Ministry of Finance organizes an annual call for tender. It also handles any modifications required to demilitarise or neutralize arms.

Ammunition sold on the market is also verified by the BE through ballistic testing and by stamping the model and calibre on cartridges.

81. Several countries like Germany and South Africa systematically destroy seized arms.

82. It would be advisable that, in the medium term, calibres of military arms differ from that of civilian arms to prevent ammunition freely sold to private individuals from leaking onto the illicit market.

83. RCA information is confidential and can only be communicated to another country through the *Commissariat Général de la Police Judiciaire* (Criminal Investigation Department).

84. The convention establishing the CIP was drawn up in 1914 to guarantee the safety of arms users. A new convention was signed on 7 July 1969. It is the foundation for international harmonization and involves the following countries: Austria, Belgium, Chile, the Czech Republic, Finland, France, Germany, Great Britain, Hungary, Italy, Russia, Slovakia, and Spain. CIP membership is open to any other government.

The BE director can conduct regular controls of manufacturers and arms dealers in Belgium and ask the police or *Gendarmerie* for assistance. It can also lodge complaints regarding irregularities with the Liège *Parquet* (Public Prosecutor's Office).

The BE could thus potentially control the establishment of a new marking system and require new markings for arms already in circulation, in compliance with the new procedure.⁸⁵ The CIP authority could be extended to control the registration of all arms intended for the civilian market and harmonise international registers once these are created.

Obviously, the control of military arms and their movement would extend beyond the CIP's original calling.

The Belgian Packaging Institute

Packaging approval, particularly for goods that are hazardous for transportation, is administered by the Belgian Packaging Institute (*Institut Belge de l'Emballage*, IBE), the only body established for this purpose in Belgium. Explosives and ammunition fall under the category of dangerous goods, and their packaging must be controlled by IBE. Section 3.1.2. of this report described regulations concerning the application of the recommendations of the United Nations Committee of Experts on the Transportation of Dangerous Goods. On IBE recommendation, a certificate of approval is issued by the Ministry of Communications and Infrastructure's Commission for the Coordination of Transport of Dangerous Goods, with approval from the Ministry of Economic Affairs' Explosives Department. Only then can the manufacturer begin to package its goods for shipment. At export, customs officials check compliance of packaging and its markings,⁸⁶ identical and thus identifiable in any country regardless of transport method.

International regulations on packaging could thus be extended to include the marking of small arms, ammunition and explosives, checked upon shipping by authorized entities. For the civilian market, this could thus be done through the same channels as for transportation of dangerous goods. This information could also be centralized in an international register. As stipulated in the UN Committee's recommendations, shippers' general

responsibilities would include marking and labelling all ammunition, explosives and arms as they mark and label every package, in compliance with regulations (UN, 1993, p. 501, paras. 7.0.1).

The National Institute of Criminalistics and Criminology

The National Institute of Criminalistics and Criminology (*Institut National de Criminalistique et de Criminologie*, INCC) is a scientific institution independent from police services, which conducts research on criminalistics, with its main task being to conduct mechanical and chemical ballistic analyses and establish and maintain a ballistics database.⁸⁷ Cases referred to the INCC involving firearms are systematically collected in a central file so as to centralize all technical and legal information on armed crime, which enables connections between various legal cases to be identified.

Technical and ballistic analyses⁸⁸ as well as chemical analyses on powder and gunshot residue are conducted on firearms submitted to the INCC by a judge. This information is then encoded. Once analysed, the firearm is returned to the judge along with the analysis results. Every piece of information on the arm is registered. In the future, photographs of arms and ammunition will be added to the electronic register.

In Belgium, information on crime is not centralized. According to INCC officials, specialists and judges work in complete isolation and only rarely submit case results to them. This results in time wasted and undermines the effectiveness of investigations. At present, given the lack of laws and directives, most of the information is not forwarded to the INCC. A law that would require automatic cooperation between *Parquets* and the INCC should be adopted and experts should be required to forward their reports to the INCC. Recently, the Mons-Charleroi *Parquet* and the INCC launched a pilot project for cases from the

85. Authors' interview with the *Banc d'Eprouves* manager, Mario Centi, on 13 August 1998.

86. Using the four numbers identifying the ammunition class and type, as well as the year, country, manufacturer and weight.

87. The Institute was established by Royal Decree of 17 October 1993, but the database was only launched on February 1998.

88. This involves mostly the restoration of serial numbers that had become illegible.

region's Court of Appeals to be automatically transferred to the INCC.⁸⁹

Looking beyond Belgium, the European Network of Forensic Science Institute is a working group for the prompt exchange of information on crime from country to country. Due to a legal issue, centralization has not been possible and the Institute is not recognized by every country. The goal would be to draw up an international agreement for the study of arms and exchange of information on crime. In the United States, the Bureau of Alcohol, Tobacco and Firearms' (BATF) National Tracing Center (NTC) has centralized computerised information on over 100 million firearms. Over 200,000 implicated in crimes were traced in 1997 alone.

Information on civilian and military firearms could thus be nationally and internationally centralized through the databases of institutions like the INCC and the NTC. For this to happen, manufacturer cooperation is needed. For arms already in circulation, gun owners could be forced to present their arms so these can be marked and re-registered. The register can be extended to the transaction of each arm to enable it to be tracked throughout its existence.

The Central Arms Registry

The workings of the RCA were explained in the previous chapter. As it stands, the RCA serves as a database for administrative information to facilitate the tasks of authorities, but does not conduct any controls. The RCA cannot even be considered as a register for firearms possessed by private citizens since it is believed that only half are actually registered in it.⁹⁰ It therefore serves mainly as a database to help the police.

In order for the RCA to become a tool for control, it would first have to be coupled with an institution responsible for the technical control of firearms such as the BE or the INCC. A royal decree should then oblige the owner of any arm to register it with the RCA. Any unregistered arm would then be considered illegal and the owner would be subject to sanctions.

Professional arms dealers' registers should also be RCA-registered and centralized. The arm should be registered at manufacture, and from that point on any transaction, whether through arms dealers

or other intermediaries, whether professional or not, should be registered.

To ensure effectiveness and harmonization, a federal bureau should be established to inspect and centralize all arms transactions in Belgium. Personnel should be technically and legally trained to control professional dealers and private citizens.⁹¹

Registers should include ammunition and their movements. For the time being, there are no controls on the holding, carrying or use of ammunition by private citizens or professionals.

Lastly, national registers for military arms and ammunition should be established.

Customs

For all exports outside the EU, customs officials check the information on the export declaration and compare it with the export license. To the extent possible, they also control packaging, the nature of the material and quantities.⁹²

It is recommended that export controls be extended to include the marking of arms and ammunition and recording the transaction in a centralized register. These controls should be conducted by specially trained personnel, either within customs or from another institution that would assist customs officers in issuing compliance certificates.

Remarks

Controls in Belgium, as in all EU countries, have been influenced by intra-community movements since borders were opened in 1993. Major problems exist in terms of implementation of and familiarity with laws in Europe because they are not harmonized. Arms have been known to enter Belgium without a 'Declaration on intra-Community

89. Authors' interview with the head of INCC and her assistant, 8 October 1998.

90. According to an RCA official interviewed on 28 July 1999, work is purely administrative and there is no physical contact with the arms registered.

91. Today, police controls of arms dealers often require them to call on another arms dealers for technical information.

92. In addition to the markings that IBE might require, inscriptions on packaging are made at the request of the client. Customs officers check these marks outside, not inside, the package, which they then seal. Authors' interview with a MECAR official on 6 April 1999.

movement or transit of arms, munitions, war materials and other military goods', which is obtained through a special procedure. Consequently, goods often go undeclared at customs.

EU countries should centralize all information pertaining to arms and ammunition in national registers so as to enable information to be exchanged when needed. The subsequent step would be to centralize all data in a common register to control all flows of arms within the EU.

Since borders are now open, regulations should be adapted and controls extended to the intra-community level. There is cause for worry that increased mobility means a step forward for trafficking and impunity and two steps back for the control of arms.

Finally, the European Directive on control of the acquisition and possession of weapons (EU, 1991) excludes military material, focusing mainly on handguns and hunting rifles. According to a Belgian Ministry of Justice official, the European Commission does not have any amendment planned for the near future.⁹³ However, the Commission should envisage incorporating the clauses of the Firearms Protocol (see Chapter 4) relevant to the Directive.

In light of the above, registers of arms and ammunition for military use should be established not only at a national level but more globally, starting with the EU and other regions of the world.

3.2.3. Sales

In Belgium there are four main manufacturers of arms and ammunition which export nearly all their production, mainly destined for the military market (Mampaey, 1998). They include:

1. FNHERSTAL, the military arms branch of Groupe Herstal, and its subsidiary, BROWNING, which is mostly civilian. F.N. produces small arms and ammunition;

2. FORGES DE ZEEBRUGGE, which produces rockets;

3. MECAR, producer of ammunition of various calibres, mostly rifle-grenades, rockets and shells;

4. PB CLERMONT, producing spherical powders and propellant cartridges.

Arms and ammunition export formalities were examined above. In most cases, manufacturers participate in calls for tender or auctions, for which they provide clients with quotations provided they have export licenses. The process of granting or

denying an export license takes six to eight weeks. In business terms this is a long time, but other countries, such as France and Italy, have heavier formalities and a decision can take up to several months.

In 1998 (for 2000, see: www.grip.org), Belgium granted 1,067 export licenses, representing over BF 26 billion, and denied 29, totalling BF 265 million. Licenses are therefore rarely denied. The same year, Belgian arms exports increased by 68 per cent, reaching BF 12.5 billion.⁹⁴ This increase represents mostly exports to European countries and Saudi Arabia, while exports to Africa have dropped sharply.

Belgian arms imports, mostly consisting of military arms, reached BF 2.23 billion in 1998, about half of which was for small arms and ammunition.

Marking at point of sale

Every small arms and ammunition manufacturer interviewed for this report claimed to comply with the law and that markings were as explicit as possible, even though marking is not legally required, nor are there any established procedural rules that apply to marking.

Since content markings are not checked at the point of export, each order is handled individually. For instance, sometimes the customer gives the purchaser's name and brand rather than the manufacturer's. Sometimes a factory that is short of time or resources will call on another within the same group but located in another country, or even a competitor, to furnish them with the arms required to fill an order. In this case, the requestor's marking is used, thereby confusing the traceability. Manufacturers also admit there are exceptions to the principle of marking, particularly for the military market. Even the Belgian army sometimes orders unmarked products from other countries.

Packages are usually stacked on pallets, each indicating the number of cases, type of material, weight and possibly the batch number it contains.

PB Clermont management claims that the source of their products is always traceable. Powder is placed in barrels which are marked on the outside, and cartridges display their initials and year of

93. Authors' interview, 12 March 1999. The same official pointed out that arms dealers use intra-community movement to bypass Belgian law.

94. The portion of small arms and their ammunition is valued at around BF 7 billion and includes their parts and accessories.

manufacture. Given that PB Clermont only has one manufacturing site and limited product types, their statements are plausible. But resales would still be difficult to keep track of in the absence of an adequate and accessible international registration system. Nevertheless, the factory is said to subcontract cartridges that are not PB Clermont-marked to at least one French brand name.⁹⁵

Forges de Zeebrugge marks its rockets with metal plates on which the name and batch number are blind-stamped. A company representative noted that these plates are important for their brand name image. Forges de Zeebrugge also regularly invites controllers and customs officers to training seminars.⁹⁶

At MECAR, most sales are to states, mainly Saudi Arabia, on a competitive bid solicitation. They accept small orders (1,500 to 2,000 units), unlike major producers like Giat which require a minimum order of 5,000 units. MECAR's resource manager states that it always checks whether the customer has the material to use with the ammunition before accepting an order. They also claim to have a limited clientele which they can hand pick since they have no problems selling their products.⁹⁷ Their ammunition should therefore be easily traceable.

In addition to applying the UN criteria to mark packaging for shipment of dangerous goods, MECAR also marks its products by applying colours to basic alloys through electrolysis. These correspond to categories of use (drills, anti-tank, anti-personnel), using NATO symbols. A colour code is added on the package to identify the type of projectile. Cartridges of a high-enough calibre are blind-stamped with the producer's initials, type of projectile, batch number, year of manufacture and calibre. Customers can request special markings in accordance with their contract. However, according to the head of the factory's marking and packaging department, there is always a batch number that enables the tracing of ammunition.⁹⁸ Powder type is marked (e.g., white phosphorous) with dye that can be removed if the item has not been shipped, allowing for the powder to be used in another order.

At FN Herstal, each arm is said to have a unique serial number that is recorded in an electronic register (since 1999),⁹⁹ and the initials 'FNB' inscribed. The year of manufacture is also marked on handguns, but not on rifles or machine guns. Usually, type and calibre are stamped 0.3 mm deep

on the main section of the weapon.¹⁰⁰ For new models made with composite material, like P-90s,¹⁰¹ markings are cast on the polymer section, in which case only the serial number would be marked on the metal part, acting as a bridge. Armies sometimes request that their own serial numbers and country initials be marked. On spare parts, numbers can be stamped by the customer. FN also often manufactures arms to help out the group's subsidiaries in other countries. In this case, Herstal reference marks are always inscribed.¹⁰² According to the group's management, the manufacturer no longer has control of use after sale.¹⁰³

Moreover, FN is said to only have a limited amount of stock and works mostly on an order-by-order basis. The factory has a single entrance that is security-monitored for theft.¹⁰⁴

95. Authors' interview with a PB Clermont official, 16 September 1998.

96. According to the Forges de Zeebrugge manager, problems only arise in other countries that have permissive laws. She complained about the tendency to lump together manufacturers and traffickers, and the high amount of theft from Belgian security stocks. She also pointed out that Belgian officials are not sufficiently trained in matters of arms and ammunition (telephone conversation of 9 April 1999).

97. Authors' interview of 6 April 1999. The same official claims that some countries, reluctant to provide final end-user certificates, buy from other producers, mostly Asian. He believes that in Europe and in the United States, these certificates would be extremely difficult to bypass. This is further proof of the need to harmonize laws and controls.

98. Interviews conducted on 18 September 1998 and 1 April 1999.

99. Based on the authors' interview with the group's communications manager on 24 August 1999. Previously, the register was kept in the form of a ledger.

100. The main section of a rifle is the frame. For the Belgian army, barrels are also marked. These are marked on the receiver for handguns.

101. This new hand/machine gun model can penetrate certain armoured vehicles and pierce bullet-proof vests. It has a firepower of 800 rounds a minute which, instead of piercing the target, stay lodged in it. A bill banning their sale was filed on 13 October 1999.

102. In the absence of an international register for recording transactions, this practice can create confusion since the sale is conducted by another factory.

103. During an interview held on 24 August 1999, the authors were told that 'sometimes the end-user indicated on the final end-user certificate is not the real end-user, in which case it is the manufacturer one would go after.' It should be noted that an association exists to defend manufacturers' interests: the European Defence Industry Group.

104. When there was much more personnel (10,000 compared to the current 1,000), the factory had three entrances and was more difficult to control. But managers interviewed insisted that the large collection of arms held by former engineer Mendez, involved in arms trafficking in the 1980s, were not related to arms manufactured at FN. The collection is said to have been stolen and Mendez was murdered in 1986.

Resale

In Belgium, state security forces and institutions, like ministries or the post office, regularly resell their excess stock. Most of these resales are administered by the *Administration des Domaines* (AdD) to arms dealers on public tender. AdD also sells seized arms by tender twice a year. In 1995, these sales only amounted to BF 4,900,000. Given that some of these arms end up in the hands of criminals and are sometimes seized a second time, these resales are far from justified. Moreover, the Ministry of Justice has granted AdD annual sales totalling at least BF 500,000.

Until the recent integration of the *Gendarmerie* into the civil system, its arms were only military. Today, it stocks both military and civilian arms. In addition to the serial numbers, arms also displayed an internal administrative number by which they were classified in a register.¹⁰⁵ Following several recent incidents of stock theft, the arms were found to be used in hold-ups, their numbers having been erased. It was possible to recover their serial numbers, but not the *Gendarmerie*'s internal numbers. Thus, the arms could not be found in the register. The *Gendarmerie* therefore had to do away with its internal numbering system, keeping only the serial numbers. As for ammunition cartridges, they are marked with three initials of the manufacturer. A *Gendarmerie* official told the authors that important surplus stock resales take place regularly, in collaboration with a few major trustworthy intermediaries. Recipient particularities are taken into account.¹⁰⁶ Furthermore, the *Gendarmerie* can repair the basic parts of arms and remark them.

It is thus evident that security forces and AdD resales can indirectly fuel the illicit market and bring military arms to the civilian market.

As for sales to civilians and among private individuals, the authors examined a few major cases within the section of the 3 January 1933 law.¹⁰⁷ In sum, the purchaser must contact the municipal police to register an arms purchase. If an arm is sold by a professional arms dealer, once the client's authorization for a given weapon category has been verified, the dealer must record the sales transaction in their registers. If an arm is sold by a private individual, the sales must be signalled to the municipal police.

If arms are sold to a buyer located in another EU country, an agreement for intercommunity transfer must first be obtained from the Ministry of Economic Affairs in compliance with EU Directive 91/477, in force since 1 January 1994. Arms can be sold by private individuals or arms dealers to private individuals or arms dealers.¹⁰⁸ Once an intra-community transfer has transpired and is followed by export to a non-EU country, arms tracing becomes extremely difficult and the speed of these transactions would outrun the reflexes of potential investigators.

3.3. Other countries

Below is an overview of laws in several countries pertaining to the marking and registration of small arms and their ammunition and related initiatives.

3.3.1. Canada

In Canada, 26 per cent of households own at least one firearm. These arms are implicated mainly in cases of domestic violence and suicide, particularly involving young people. Canada banned automatic firearms in 1979, semi-automatic firearms susceptible to being converted to automatic arms in 1991, and semi-automatic versions of military-style firearms in 1995.

Changes since 1995 led to the adoption in March 1998 of the Firearms Act, which entered into force on 1 December 1998.¹⁰⁹ This law bans such weapons as semi-automatic assault rifles for military use, short-barrelled handguns and light weapons. It requires all gun owners hold licenses by 2001, that all guns in circulation be registered by 2003, and includes controls pertaining to the sale of ammunition and to weapons storage. The marking of a registration number on all firearms in civilian hands is stipulated in the Firearms Registration

105. Authors' interview with a *Gendarmerie* logistical support manager on 22 March 1999.

106. Military arms destined for the civilian market, for example, would be demilitarised by the *Banc d'Épreuves*.

107. For a study of the various possibilities for sales and legal obligations, see Christian Maréchal, *op. cit.*

108. *Ibid.*

109. 'Firearms Act, Regulations,' Canadian Firearms Centre; <http://www.cfc-ccaf.gc.ca/>

Certificates Regulations section of the Act.¹¹⁰ As with the former law, the new Act does not apply to military arms and therefore exempts the Canadian armed forces from adhering to the new regulations.¹¹¹

3.3.2. Switzerland

In Switzerland, 27.2 per cent of households own firearms. While this figure is high, gun-related crime and violence is considered rare.

While sales between private individuals should entail written agreements, there is no legal obligation to submit a copy to the authorities concerned. As for exports, end-user certificates are not required if the clients are government officials.

Swiss law on explosives is particularly interesting since it stipulates that all explosives must be marked for tracing.¹¹² Marking is controlled by Zurich's bureau for scientific research, which considers that since marking alone cannot prove the guilt of the accused, it serves strictly as a tool to keep proliferation in check (Schlatter, 1999). This law does not apply to military forces or the police, nor does it apply to explosive powder used in ammunition, since explosives are only considered as such if used for explosion.

3.3.3. France

France is the most armed country in Europe. French civilians own an estimated 10 to 18 million firearms, only 6 million of which are authorized. Each year approximately 4,000 deaths occur by homicide, accident or suicide.¹¹³

The firearm law dates back to 1939 and was amended by decree in 1993, 1995 and 1998, but essentially remained unchanged and, according to some experts, is inadequate and difficult to implement.¹¹⁴ Hunting rifles can be purchased without restriction and require neither the presentation of identification nor a hunting license. Carbines, handguns, pump action firearms, 22 long rifles and hunting carbines are freely sold upon presentation of identification. Handguns and semi-automatic military weapons require authorization from police headquarters and sporting rifles require six months' membership at a sports shooting range. The decrees of 1993 and 1995 banned the sale of shotguns and certain arms for self-protection, which resulted in a fall of approximately 20 per cent in

dealers' sales. The decree of December 1998 strengthened control of military and civilian arms held by private citizens.¹¹⁵

In 2001, a new decree requires arms brokers to submit their activities for prior authorisation and to keep a register of their transactions.

3.3.4. Great Britain

In Great Britain, all firearms must be registered and a permit is needed to purchase ammunition. Only 4 per cent of households own arms and the percentage of firearm-related violence is the lowest worldwide.

The killing of 16 children in Dunblane, Scotland, in March 1996 gave rise to a very strong public reaction, and in June 1997 Great Britain enforced a ban on all handguns. Citizens handed in 160,000 major calibres which were subsequently destroyed in foundries. However, given the high number of illicit arms, the effectiveness of the law cannot be evaluated with precision. Arms are said to have been transferred to other European countries.

This ban applies only to the civilian market, however, and could have a negative effect on the security of other countries. Handguns can be exported, which according to American researcher Natalie Goldring presents an ethical problem since Great Britain allows the export of goods it considers a source of insecurity for its own citizens (Goldring, 1997/2 and 1999).

110. According to Mike Buisson, Director of the Canadian Firearms Register, for arms produced before 1 December 1998 this number is featured on a sticker fixed to the arm. The arm cannot be traced using this marking system. However, the serial number of arms produced after 1 December 1998 must be engraved on the arm. Facsimile of 3 March 1999.

111. Article 3 of the Firearms Act.

112. See the 26 March 1980 ruling on explosives, supplement to the 25 March 1977 federal law. Article 5^o of the ruling indicates: 'The explosive must contain a marking substance that makes it possible to trace the origin with certitude, even if it has been detonated. The marking substance must be approved by the Central Office, which will adapt its composition when needed.' Electric caps, fuses and detonators are also to be marked indicating the manufacturer, place and date of manufacture (Articles 7 and 9).

113. *France 3*, TV programme, 'La marche du Siècle', November 1998.

114. French Member of Parliament Mr. Bruno Le Roux; *ibid.*

115. Decree 98-1148 of 16 December 1998 amending decree 95-589 of 6 May 1995 on the application of the decree of 18 April 1939 establishing the system of war equipment, arms and ammunition: <http://www.legifrance.gouv.fr>

3.3.5. The United States

Gun laws vary widely from state to state, but are generally lax.¹¹⁶ Given the inalienable right of each citizen to have and bear arms enshrined in the 2nd Amendment of the US Constitution, every bill that attempts to restrict firearms is systematically rejected. The gun lobby obviously wields major influence. The National Rifle Association (NRA) makes substantial gifts to politicians. During the 1996 elections its donations totalled approximately USD 2 million.

The gun industry makes USD 2.7 billion in turnover. In light of the successful proceedings against the tobacco industry, some states would like to introduce a monetary disincentive for the gun industry by claiming substantial sums in damages.

Some key laws contain explicit provisions on small arms (Goldring, 1997/2).¹¹⁷ Competence to handle these matters varies depending on the nature of the transaction. Imports are controlled by the Bureau of Alcohol, Tobacco and Firearms (BATF) while exports are overseen by the State Department. Some states have adopted a bill limiting private citizens' purchases to one firearm a month, but to be effective, it should be adopted at a national level.¹¹⁸

Contrary to many other countries, sales of ammunition to private citizens are not regulated in the United States and many users handload their cartridges. Also, controls on sales of explosives are relatively permissive.

In the wake of several recent incidents such as the Littleton killings, American public opinion is starting to change. The rates of homicide (62 per million) and suicide (72 per million) by firearm are the highest among Western countries. Every day, an average of 14 children and teenagers are killed through the use of these weapons (Beard, 1999).

As for exports, in June 1997, the House of Representatives adopted a code of conduct containing a criterion on human rights and other criteria meant to ban transfers to non-democratic countries. The President can nonetheless authorize certain exports for reasons of national security (Pace, 1997). The United States reports its yearly exports of small arms, while imports of military small arms are reported to Congress by the Department of the Treasury, which also provides statistics on the use of these firearms in crime (Goldring, 1997/2).

Lastly, the US government has increased controls on arms dealers: all US citizens and persons under US jurisdiction must be registered and must obtain authorization from the State Department before engaging in international trade of arms.¹¹⁹

3.3.6. South Africa

Since the end of apartheid in 1994, the possession of small arms has permeated into all levels of South African society. Wars in neighbouring countries and 'porous' borders have contributed to this phenomenon. Due to the embargo during apartheid, the domestic arms industry in South Africa developed extensively to produce all kinds of military small arms. In 1996, there were 3,503,573 arms against 1,933,222 licenses for possession (Smith and Vines, 1997).

The distinction between military and civilian arms is not clear:¹²⁰ automatic rifles are classified as military, whereas semi-automatics, even if of the same calibre, are classified as non-military arms.

No legal provision exists for marking military arms. However, to register a civilian firearm, a registration number must be engraved by the Central Firearms Register (CFR). Officials have trouble with the markings which are often rendered illegible, and seek a more reliable system.¹²¹

There is no legal provision for the marking of ammunition. However, cartridges are usually marked with the manufacturer initials. Handloading is nevertheless common.¹²²

To export arms, a license must first be obtained from the National Conventional Arms Control Committee, which consists of representatives from several ministries. Since 1996 this committee has taken a number of criteria into account, such as the

116. For example, an arm prohibited in Chicago could be used in Texas, where the only constraint is that it must not be visible. Since 30 November 1998, the new federal law imposes purchaser background checks.

117. The Gun Control Act, 1968; the National Firearms Act, 1934; the Arms Export Control Act.

118. Twelve is Enough Anti-Gunrunning Act, January 1997, presented by Republican Charles Schumer.

119. State Department Declaration, 9 November 1998.

120. The Arms and Ammunition Act, No. 75, 1969.

121. Authors' interview with Mr. R. A. De-Caris, head of the Legal Section Support Services of the South African Police, Brussels, 13 October 1998.

122. Fax from Mr. Paul Kruger of the South African police, 10 November 1998.

region's military stability and human rights and security situations, before delivering licenses.

South Africa no longer officially imports military small arms since it now manufactures them. Those imported for sale on the civilian market must be marked with CFR-assigned numbers.

The government strengthened measures for the control of small arms and established voluntary collection programmes. In February 1999, it announced its decision to destroy arms found or seized, as well as its small arms surplus, including some 260,000 firearms and several hundred metric tons of ammunition (UN, 1999/1).

3.3.7. Other initiatives

In Australia, two weeks after 35 persons were murdered at Port Arthur on 28 April 1996, a comprehensive law was adopted requiring the registration of all firearms, strengthening conditions for license acquisition, banning hunting rifles and semi-automatic arms and requiring a separate license for each firearm. This law enabled over 500,000 firearms to be collected in August 1997, which were re-purchased for a total sum of 260 million Australian dollars.¹²³

In Brazil, a law establishing a national system for the registration of firearms entered into force in 1997.¹²⁴ In China, two regulations on the control of firearms and exports entered into force in October 1996 and January 1998. The Chinese government's policy is to destroy all confiscated arms (300,000 in 1998) (UN, 1999/2).¹²⁵

In Germany, arms purchased by German companies and arms transferred through persons based in Germany require a license, even if the material does not cross German territory.

Box 3.3 Interpol resolutions

Interpol (International Criminal Police Organization) is an intergovernmental organization with 178 member countries, each with a National Central Bureau that centralizes all data of international interest. The general secretariat is located in Lyon, France. Its role is to ensure and promote cooperation and exchange of information among criminal police authorities within the

framework of national laws, and to prevent and suppress ordinary crimes. Investigations are carried out by member countries' national police forces.

Experience shows that there are three main obstacles to efficient international cooperation in combating arms trafficking (Manross, 1998):

- differences between member countries' laws;
- different structures of national law enforcement often make it very difficult, from the outside, to determine the competent service to deal with a particular matter or to provide information;
- linguistic barriers.

In August 1990, in response to two Interpol General Assembly Resolutions, Interpol initiated a computer database called the Interpol Weapons and Explosives Tracing System (IWETS) to collect, analyse and disseminate information on criminal activity involving firearms and explosives. This system is currently the only international database of its kind, designed to collect information on trafficked, stolen and recovered firearms. Unfortunately, there is a low participation rate on the use of IWETS by Interpol members (Manross, 1998).

Several Interpol General Assembly Resolutions¹²⁶ address firearms:

- In 1963 in Helsinki, it was decided to create special documentation for proofmarks of firearms and ammunition to assist in their identification (Interpol, 1963).
- In 1968 in Teheran, it was recommended that effective legislation on holding and possession of arms and ammunition be established, that import/export and trade be placed under the control of state authorities, and that a centralized file be created at a national or regional level of persons authorized to hold or carry firearms (Interpol, 1968).

123. <http://www.gun.law.gov.au>

124. Law 9437 establishing a national arms registration system (SINARM). 1.6 million arms were registered in Brazil in July 1999.

125. See other state initiatives in the same report.

126. Submitted by Mr. Robert Wall of the Interpol Firearms and Explosives Unit, following an interview with the authors on 30 June 1999.

- In 1972 in Frankfurt, a resolution was adopted instantly requesting each country's authorities to supervise the trade in firearms and ammunition in their own territory, to provide information concerning acquisitions in other countries by their nationals or residents and to make this information available to the other countries concerned (Interpol, 1972).¹²⁷ It was also stipulated that the 'illegal possession and smuggling of firearms very often have their origin in purchases of weapons abroad.' The link between the problem of trafficking and inadequate controls of legal transactions was established, stressing first that it would be wrong to separate the legal from the illegal in searching for effective control solutions; and second, the original transaction in trafficking cases takes place in another country. This means that national laws are not harmonized and that, due to lack of communication, such information does not pass through the relevant official bodies.

- In 1986 in Belgrade a resolution was passed on illicit trafficking of arms and explosives and on terrorism (Interpol, 1986). Fourteen years after the Frankfurt Resolution, information exchange among member countries has still not progressed. The Assembly decided to create a special form to establish a list of all the information pertaining to arms and explosives trafficking.

- In 1987 in Nice, the IWETS system was established with a resolution on the form for transmitting information on the discovery, confiscation and trafficking of arms and explosives.

- In 1992 in Dakar, a resolution on the identification of arms was passed. This recognised that

'the police's inability to piece together the itinerary of firearms from their place of manufacture through their various sales transactions and subsequent transfers often impedes police work' (Interpol, 1992).¹²⁸

- Finally, in 1997 in New Delhi, the General Assembly recognized that the fight against trafficking depends on the cooperation of member countries on all levels and recommended that firearms be identified through the use of permanent marking to indicate the manufacturer, model, calibre, number and country of origin. It also recommended the establishment of a tracing system and strengthening of national laws (Interpol, 1997).¹²⁹

Interpol can thus help track small arms trafficking. For a tool to be effective, however, adequate resources are needed. There is only one analyst at Interpol working on firearms trafficking. Some recent small arms reports make frequent mention of the need to cooperate through Interpol in combating international arms trafficking. This means member countries will have to contribute the funds required.

It would also be advisable that a separate department with sole responsibility for overseeing the problem of small arms and ammunition be established, possibly within the Interpol framework.

127. See Appendix 1.

128. See Appendix 2.

129. See Appendix 3.

4. An Analysis of the UN Firearms Protocol

This chapter looks at the ‘Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, supplementing the United Nations Convention against Transnational Organized Crime.’ Developed in Vienna under the auspices of the United Nations Economic and Social Council (Ecosoc), this instrument is important to any discussion of small arms tracing as it provides for the establishment of a universal marking system and is legally binding. Yet, to achieve a better understanding of the negotiation of this international convention, some background on preceding initiatives is useful.

4.1. Initiatives to develop an international legal instrument on the manufacture of and trade in small arms and ammunition

Of particular importance are the June 1997 Organization of American States (OAS) Convention (OAS, 1997)¹³⁰ and the OAS ‘Model Regulations for the Control of the International Movement of Firearms, Their Parts and Components, and Ammunition’ of 2 June 1998.¹³¹ For the first time at the international level, the Convention, in Article VI, provided for the marking of firearms at the time of manufacture in order to facilitate their tracing. The Convention further recommended that States Parties exchange information and cooperate in implementing it.

While problems have arisen with respect to the ratification and implementation of the OAS Convention, significant progress for the development of an international instrument to combat illicit small arms trafficking was achieved in 1998 and 1999. The OAS Convention generated political will which gave renewed energy to the development of an international treaty.

Following three years of work on the issue, Ecosoc adopted a resolution at its 7th session held in Vienna in April 1998, calling on UN member states to develop a convention to combat illicit trafficking in firearms. The resolution was supported by 56 states.

G8 countries backed this resolution in the final statement of their May 1998 Birmingham Summit, thereby bringing the small arms issue into a process of globalisation. On 9 December 1998, the UN General Assembly adopted two resolutions (UN, 1998/2 and 1998/3) providing for the establishment of a special intergovernmental committee, open-ended in its composition, for the purpose of developing a general international convention to combat transnational organized crime and, more specifically, the illicit manufacturing of and trafficking in firearms and ammunition. The committee was to use the report of the UN Group of Governmental Experts on Small Arms (UN, 1997) along with Ecosoc resolutions (Ecosoc, 1998) as the basis for its work.

In November 1998, the Canadian government, concerned by the problem of civilian possession and transfer of small arms,¹³² submitted a preliminary draft protocol to the UN Security Council which was meant to serve as a foundation for the development of a firearms convention.

Member countries were then invited to present recommendations and suggestions for the first *ad hoc* committee session which took place in Vienna in late January 1999. At this session, the Canadian proposal was adopted as the key document (UN, 1998/4) and various international initiatives to develop a legal instrument to combat the manufacturing of, and illicit trade in, firearms and ammunition, mentioned in UN Resolution A/AC.254/7 of 10 December 1998, were examined.

Among UN-based initiatives, this resolution cites the recommendations of the Group of Governmental Experts on Small Arms, the UN Disarmament Commission’s Guidelines for International Arms Transfers adopted in 1996 (UN, 1996/3), and the Coordinated Action on Small Arms (CASA).¹³³

130. The Convention is widely considered to be an excellent regional model and an important tool in the fight against firearms proliferation.

131. The ‘Model Regulations’, through the use of harmonized procedures, are designed to strengthen controls over the legal trade in firearms and their ammunition in order to prevent such weapons from being diverted to the illicit market.

132. See the new Canadian firearms Act of March 1998, *op. cit.*

133. Established on 24 June 1998 by the UN Secretariat’s Department for Disarmament Affairs.

With respect to international initiatives, the document retains: the principles and plan of action recommended by the G8 Senior Experts Group on Transnational Organized Crime and approved at the G8 Birmingham Summit; the Wassenaar Arrangement on Export Controls and Conventional Arms of July 1996;¹³⁴ the 'International Agenda on Small Arms and Light Weapons: Elements of a Common Understanding' agreed in Oslo on 13–14 July 1998;¹³⁵ and the 'Brussels Call for Action' of 12–13 October 1998.¹³⁶

At the regional level, the document cited, in addition to the OAS Convention and 'Model Regulations' of 2 June 1998;¹³⁷ the EU 'Programme for Preventing and Combating Illicit Trafficking in Conventional Arms' (EU, 1997);¹³⁸ the EU 'Code of Conduct on Arms Exports' (EU, 1998);¹³⁹ and the Economic Community of West African States' (ECOWAS) declaration of a small arms moratorium (ECOWAS, 1998).¹⁴⁰

Pursuant to General Assembly Resolution 52/38 J of 9 December 1997, the UN Secretary General presented the Group of Experts' report on ammunition and explosives in June 1999. It highlights the lack of centralized information and documentation in legal manufacturing and trade, and with respect to stocks of ammunition and explosives. The report recommends the strengthening of national laws governing the transfer of these materials and favours standardized marking and registration at the international level following a study of its practical aspects. The report also emphasizes the links between the legal and illegal markets, and points out how trafficking is fostered by theft and 'grey' market activity.¹⁴¹

The report of the Second Group of Experts on Small Arms (UN, 1999/2) examines the implementation of the previous report's recommendations (UN, 1997) and formulates new ones. This report highlights several key aspects of the small arms issue and stresses the importance of a reliable marking system and the need for more information on this subject.¹⁴² Yet, it fails to address the crucial question of registering transactions in a globally accessible register. It is also unfortunate that the Group of Experts separates ammunition from small arms issues, as these are inseparable in practice. The secrecy dominating the legal manufacturing of, and trade in, military small arms is another problem the Group does not address. Nevertheless,

at the end of its report, the Group recommends paying particular attention to military-style arms and to the legal transfers of small arms, suggesting that the separation of the military and civilian aspects of the problem, and of its legal and illegal dimensions, cannot be indefinitely maintained.

It should also be mentioned that the Council of the EU adopted a binding Joint Action for 'combating the destabilizing accumulation and spread of small arms and light weapons' (EU, 1999), while in May

134. The 33 original participating countries, including EU and NATO countries, drafted an agreement to contribute to international security and stability by promoting transparency and greater responsibility in arms transfers and encouraging participating states to strengthen national laws for the effective control of exports of small arms and ammunition.

135. The 21 participating states pledged to introduce stricter controls on licit transfers so as to curb the spread of small arms to war-torn societies.

136. The International Conference on 'Sustainable Disarmament for Sustainable Development' was attended by representatives from 98 states and some 100 NGOs. They called for strengthening the fight against arms trafficking and limiting the sales of exporter countries (see <http://www.grip.org>).

137. This instrument aims to strengthen controls on legal transfers in order to support the implementation of the OAS Convention.

138. The Programme calls on EU Member States to coordinate their actions in the area of arms exports, notably by strengthening cooperation among various agencies through increased information exchange. It also aims to strengthen laws governing arms transfers and assist countries recovering from conflict. It should be noted that this instrument is merely a declaration of intent, not a treaty. Moreover, it does not tackle the problem of the lack of harmonization of national laws within the EU, which facilitates much of the trafficking (Adam, 1999/2).

139. The Code sets out eight criteria for EU Member States to consider before exporting arms, such as the respect of human rights, preserving regional peace and security, and considering the risks of illicit trafficking or re-export. While the Code constitutes a significant step towards the harmonization of Member State regulations, it has been criticized for its non-binding nature, the vagueness of its criteria, the inability of Member States to prevent their partners from selling relevant arms, and the confidential nature of its information exchanges (Adam, 1999/2).

140. The Moratorium entered into force on 1 November 1998, renewable for a period of 3 years. In July 2001, it was renewed for an additional three years. A programme was agreed in Bamako on 24 March 1999 for the purpose of supervising the Moratorium, establishing a small arms database and register, and training signatory country personnel. A Code of Conduct to support Moratorium implementation was adopted by ECOWAS heads of state and government in Lomé on 10 December 1999.

141. This may be defined as the point of overlap between licit transfers and illicit trafficking. It covers such phenomena as the re-export of legally sold material, transfers to countries under embargo via springboard countries, and material sold through brokers to recipient countries that do not meet export criteria.

142. Nevertheless, not a single practical aspect of marking was addressed, while the focus on a favourable quality-price ratio for marking suggests a certain degree of confusion and discouragement.

1999 the International Action Network on Small Arms (IANSA) launched a campaign to curb the spread of small arms.¹⁴³

4.2. Overview of the Protocol (UN, 2001/7)

Against the backdrop of various international initiatives and based on the key Canadian document mentioned above, at its first session in January 1999 which was submitted to negotiating states at the 3rd session in late April 1999. Initially this Protocol was to be signed before the end of 2000, but given the number of negotiating states (114 at the 5th session in mid-October 1999) and their varied interests and points of view,¹⁴⁴ this deadline was extended to the end of May 2001¹⁴⁵ when the UN General Assembly adopted the final text (UN, 2001/7).

Initially, it was recommended that states combat the illicit manufacturing of and trafficking in firearms and ammunition by:

- establishing common standards for the import, export, and transit of these items;
- establishing an international network of cooperation and information exchange at the national, regional and global levels, including a system to identify, trace and track small arms;
- extending international cooperation to ammunition and related material and developing an international system to manage trade transactions and shipping of this material;
- establishing a coordination bureau responsible for facilitating the implementation of the Protocol.

According to officials who participated in the negotiations, despite efforts to reach consensus on certain basic principles—such as the links between legal and illegal trades, civilian and military markets, and national and international markets—the Protocol inherited the limitations of the OAS Convention (Adam, 1999/2). These limitations are threefold. Firstly, the internal dimensions of national legislation are not affected, though the main problem facing the states of the Americas is lax US regulation¹⁴⁶ (O’Callaghan, 1998; Goldring, 1997/2). Secondly, the focus is on tackling crime rather than preventing conflict. Lastly, the destruction of arms which are seized is not addressed. It should also be emphasized that, until now, the absence of

a universal marking system has rendered the application of the OAS Convention almost impossible.

Focused squarely on the problem of crime, the Protocol does not apply to state-to-state transactions, nor to transactions that have prejudicial implications for national security (Article 4). The latter exception could cover transfers from states to non-state actors, nevertheless, these transfers can be lucrative and involve private companies. A case-to-case interpretation will therefore be necessary in order to determine if the application of the Protocol would undermine the rights of States Parties. The restriction of the Protocol to commercial transactions alone is a major limitation. While these transfers are an important part of the overall trade, the principle of transparency ought to apply to all transfers.¹⁴⁷ Several countries also argued that the limitation of the Protocol’s scope of application to illicit manufacturing of and trafficking in firearms related to transnational organized crime could create technical difficulties and asked for a broader interpretation, yet without success.¹⁴⁸

Some aspects of the legal small arms trade are directly linked to the problem of illicit trafficking and manufacture and should have been addressed in the Protocol (UN, 2000/1).¹⁴⁹ There is a direct relationship between the trade in small arms, whether

143. IANSA is an initiative of more than 300 NGOs and now has branches in several countries, including the RAIAL (IANSA acronym in French) in Brussels, IANSA Vlaanderen in the Dutch-speaking part of Belgium, GANSA in Geneva, and NYANSA in New York.

144. For example, Belgian participants at the October 1999 session stressed that very little progress was made in three days of talks because of the number of speakers and the rigid positions held by some of them. The draft document, amended in April 1999, was virtually unchanged. The sessions of January and February 2000 focused mainly on marking and tracing.

145. The last session (12th) of the Protocol negotiations was held from 26 February to 3 March 2001.

146. Several researchers have shown that without domestic control over access to arms, it will be very difficult to control international trade.

147. During the negotiations, Belgium argued that Article 4 could be in violation of the Geneva Convention regarding armed conflicts regulation. While South Africa and Colombia opposed the exemptions, it was decided at the 7th session to exclude state transfers from the Protocol.

148. It should be noted that the illicit trade does not only involve organized crime. Theft, loss and diversion of governmental stocks, as well as grey area transactions, are major sources of supply to the illicit market.

149. This was commented upon, for example, in footnote 73 of the 8th session’s draft report.

legal or illegal, and their excessive and destabilizing accumulation.

The Protocol also fails to address the problem of arms used in armed conflict. The Firearms Protocol, given its global nature, should have considered the small arms problem in a broader context than have the OAS instruments, recognizing and addressing the relationship between crime and violent conflict.

Another weakness of the Protocol that mirrors the inter-American Convention relates to confiscated firearms. States Parties are given complete latitude in the adoption of measures 'necessary' to prevent seized arms 'from falling into the hands of unauthorized persons'. Rather than permitting the storage of illicit arms for possible resale or recycling, it would have been preferable to require their destruction.

Finally, various provisions of the Protocol—for example those dealing with marking and record-keeping—only apply to firearms, not ammunition, though both should logically be part of the same marking and registration system.

Definitions

- The definition of firearms set out in the Protocol is quite broad and includes military-style weapons to the extent that these are destined for the civilian market. Similarly, ammunition rounds and components are included, at least where the latter are authorized in the respective State Party.

- Explosives are not included in the definition despite a proposal from Mexico to include them.¹⁵⁰ A Special Committee may subsequently look at developing an international instrument on explosives.

- The definition of illicit trafficking is inadequate¹⁵¹ as it leaves government officials the job of defining what is illegal without reference to any international standard. The definition adopted in the Report of the Group of Governmental Experts would have been preferable (UN, 1997). It defines as illicit state-to-state transfers which contravene international humanitarian law.

- The definition of illicit manufacture ('without marking the firearms at time of manufacture') is confusing. In fact, many national laws do not yet require any kind of marking or record-keeping at the time of manufacture. The Protocol itself foresees marking occurring independently of production—for example, in the case of transfer from government

stocks of unmarked or seized arms. There is therefore a risk that weapons manufactured legally prior to the entry into force of the Protocol will be considered illicit. It would have been preferable to add a clause providing for the marking of arms already in circulation.

Sovereignty, jurisdiction

States Parties to the Protocol will be obliged, by adopting legislative and other measures, to fulfil their obligations under it. Yet, in keeping with national constitutions and national sovereignty, they alone have authority within their territories. Other states have no legal basis for intervening. It would have been preferable, however, to strengthen control through the intervention of other States Parties or even a supranational institution.

It should also be noted that, beginning with the 8th session, EU member states were represented in the Firearms Protocol negotiations the Special Committee developed a Revised Draft Protocol on issues relating to the First Pillar.¹⁵² The Protocol touches upon the terms of the EU Council Directive concerning the control of the acquisition and possession of weapons (EU, 1991),¹⁵³ in force since 1 January 1993.¹⁵⁴

150. Several delegations were opposed to this, including Austria, France, Germany, Norway, Pakistan, Russia, Spain, Sudan, Sweden and the United States. According to Belgian participants, the official reason for this opposition was the confusion such an inclusion could cause in relation to anti-terrorism treaties. The real reason, however, derived from the commercial considerations of producer countries (authors' interview of 21 October 1999).

151. 'The import, export, acquisition, sale, delivery, movement or transfer of firearms, their parts and components and ammunition from or across the territory of one State Party to that of another State Party if any one of the State Parties concerned does not authorize...' [Article 3 (e)]. This definition of illicit trafficking does not include illicit transfers within a State Party and those destined for a non-State Party.

152. Issues relating to the First Pillar, such as marking, registers, brokering and licences, fall under the EU Commission's competence. Second and Third Pillar issues, including scope or the relation to the UN Convention on organized crime, fall under national (Member State) competence.

153. Note that the Directive does not address military arms, which explains why the EU wanted to exclude state-to-state transfers.

154. Not every Member State has taken all the legislative, regulatory and administrative steps necessary to comply with this Directive.

Criminalisation

Each State Party is to adopt whatever legislative and other measures are needed in order to criminalize illicit arms manufacturing and trafficking. The criminalisation of illicit activities has yet to be explicitly defined in national laws and the list should not preclude other acts not cited from being considered illegal.¹⁵⁵

Registers

Each State Party must keep the data needed to track and identify firearms for at least ten years.¹⁵⁶ Switzerland suggested keeping records of appropriate markings¹⁵⁷ applied at the time of manufacture.

With existing information technology, there is little justification for imposing a time limit on the conservation of data, especially since small arms are usually operable for several decades. Industrialized states could assist developing states that lack the needed technology by providing them, at low cost, with computers in good condition that they have decided to replace with newer ones.

Also, rather than putting too much focus on the marking process (a point raised by the Swiss delegation), it would probably make more sense to focus on the upkeep of national registers so that these contain detailed information on all transactions—preferably centralized internationally.

Marking

The OAS Convention institutionalised the marking of small arms at the time of manufacture and place of import. This useful provision, which holds the various actors involved in the small arms trade accountable, is reiterated in the Protocol, which provides, in most cases, for the marking of the name of the manufacturer, place of manufacture and serial number of firearms at the time of their manufacture.¹⁵⁸ In addition, imported firearms must be marked such that the importer can be identified.¹⁵⁹ The Protocol also calls on the arms industry and experts to develop reliable marking procedures.

Article 8.1.c. of the Protocol provides for the marking of firearms transferred from state stocks to the civilian market (UN, 2001/3). A ban on transfers of military arms to the civilian market is not envisaged in the Protocol. It would, however,

have been preferable to systematically destroy military firearm surpluses.

At the last session in February 2001, at the Chinese delegation's insistence, the use of symbols legible only to the manufacturing country—instead of alphanumeric markings—was accepted. Only the country of manufacture has to be universally identifiable. This provision will apply only to those countries that are currently using symbols in their marking, yet where it applies it will create significant practical problems, especially with respect to the registration of symbol-based data. The implementation of marking and registration systems will be developed by each State Party subsequent to the Protocol's adoption.

Export licences

The States Parties to the Protocol will have to establish an effective licensing system for the export, import and international transit of small arms and ammunition.

The United States had proposed that States Parties which have imported firearms be required to obtain written approval from the exporting country before allowing their re-export or transfer to any end-user other than the one named in the original export licence. This proposal was not retained though it is crucial to the effective control of illicit trade, as it would enable the tracing of arms through an international register. The uncontrolled re-exportation of small arms and light weapons is a major source of diversion to the illicit market and also fosters their accumulation and distribution on a global scale.

155. The United States, backed by the Netherlands and South Africa, suggested that the States Parties adopt legal measures, under their internal laws, to punish violations of UN arms embargoes. Japan also suggested that the financing of and provision of transportation for illicit manufacture and trafficking should be made an offence.

156. Some countries suggested 5 years, while others, like Mali, suggested keeping information 'for life'. Finally, at the 11th session in October 2000, a period of 10 years was accepted.

157. The country and date of delivery, importing country, final recipient, description and quantity of articles.

158. It is just as important to mark and register ammunition, but this is not dealt with by the Protocol. Also, as explosives are not covered, there is no plan for their universal marking.

159. Preferably at time of manufacture. For the authors' opinion on this issue, see sections 5.1.1 and 5.2.1.

Coordination

States Parties are to strengthen national legislation, security measures, border controls, information exchange and mutual cooperation so as to detect and prevent illicit trafficking.

The confidentiality of exchanges is guaranteed, except for cases involving legal action. The State Party supplying the information would receive notification prior to its disclosure.

Brokers

The establishment of a system for regulating the activities of brokers was discussed at several negotiating sessions—as reflected, for example, in Article 18bis, considered at the 8th session (UN, 2000/1). Yet the final Protocol only recommends that States Parties establish such a system (article 15), mentioning in particular the registration of brokers operating within the national territory and the licensing or authorization of brokering activities (UN, 2001/3).

It is also interesting to note that the United Kingdom had proposed provisions that would allow states to sanction their citizens involved in illicit transactions in other countries (UN, 2000/1).¹⁶⁰

Entry into Force

The Protocol will enter into force 90 days after the 40th ratification for an unlimited duration.¹⁶¹ However, a State Party may withdraw within six months of notifying the UN Secretary-General.

4.3. Conclusion

The Protocol, while important, is inadequate. Complementary work, such as that undertaken by

other UN agencies that have worked on the problem of illicit trafficking, was not taken into account. In particular, the dialogue between Ecosoc and the Group of Governmental Experts on Small Arms has not been sufficient (Dyer and O’Callaghan, 1999). While the Firearms Protocol—often called the ‘Vienna process’—targets crime control, the UN experts and the UN 2001 Conference (see chapter 6)—referred to as the ‘New York process’—address the destabilizing role of military-type small arms in conflict. While separate initiatives, these objectives are complementary. Enhanced cooperation among UN agencies, within the UN system, would be one important means of bringing the two strands together.

It is also essential to incorporate state-to-state, as well as commercial, firearms transfers into global efforts to control illicit trafficking. In addition to the adoption of international conventions and the strengthening and harmonization of national legislation, the establishment of an independent international agency (see chapter 6) appears crucial to the development of a comprehensive arms tracing system.

160. See footnote 90 of the 8th session’s draft report. The proposal was not retained.

161. By 28 February 2002, 26 States Parties—including Austria, Brazil, the European Community, Finland, Italy, Mexico and Sweden—had signed the Protocol and no ratification was registered.

5. Overview of plans to improve the marking and tracing system

Since reliable marking is needed to keep records that enable arms and ammunition to be traced, it is indispensable that information on multiple transactions of an arm or ammunition be centralized in a register containing their markings and listing each transaction. To achieve this, the marking must be reliable from manufacture and remain so. At any given moment, at least one marking element should enable the item's origin and latest transaction to be identified in the register.

The UN Group of governmental experts highlighted the inadequacy of the current tracing system in 1997 (UN, 1997)¹⁶², and several initiatives were begun in 1999 to study new ways of establishing a universal marking system. Switzerland and, to a lesser degree, Canada have engaged in preliminary research on this subject. The UN has also set up a Group of Experts which compiled a report on the problem of ammunition and explosives, stressing the importance of marking and tracing (UN, 1999/3).¹⁶³ Nevertheless, the industries concerned would have to cooperate in order to speed up the otherwise long and difficult process of solving this problem.

5.1. Canadian studies

5.1.1. Marking small arms

Within the framework of the Canadian Ministry of Foreign Affairs' International Security Research and Outreach Programme, a preliminary study on marking of small arms and light weapons was conducted (Coflin, 1999). The document examines the possibility of using existing and suggested new marking methods in an international system. The importance of marking is stressed mainly because it assists law enforcement officials in finding ways to suppress traffickers and combat the illicit trade of arms. The study draws on the usefulness of a system that tracks movements of small arms, whether licit or illicit.

This study only examines the marking of metal products. Casting, stamping and engraving have long been the traditional methods for marking

metal. Laser engraving is increasingly common. Another method uses several layers of coloured tags observable through a magnifying glass. Their combination would make it possible to produce several million different codes. The use of radio frequency has also been examined. These systems involve a glass-enclosed circuit containing digital data and an electronic reader. Some circuits can be as small as a grain of rice and can be used to track vehicles and packages, and identify metal products.

After assessing such criteria as durability, availability, consignment capacity, application after manufacture, maintenance and cost, the study concluded that stamping, engraving and casting are the best solutions for small arms. Tags do not have enough consignment capacity and radio-frequency labels could be located and removed, especially in metal products.¹⁶⁴ The study's author suggests marking small arms through a technique that combines stamping, casting and engraving, by indicating the firearm's manufacturer, city and country of manufacture and the model and serial number. The report suggests that imported arms should feature an import marking and that secondary markings should be added to other components to identify the producer or recipient country. The author specifies that such an international system would only be useful if states maintain files containing data necessary to identify arms. It also recommends the inclusion of provisions for information exchange among states.

The study does not, however, provide specifics concerning the combination of these three methods nor on what would make this technique more reliable than current stamping, engraving and casting methods, which still have not been perfected in terms of the permanence of markings. Moreover, unless an importer is identified at time of manufacture, the tactic of marking arms at import and adding secondary markings does not seem realistic, and could cause confusion and complicate matters.

162. See para. 80: Recommendations: 1) 'To assist in preventing the illicit trafficking in and circulation of small arms and light weapons, the United Nations should initiate studies on the following: (i) The feasibility of establishing a reliable system for marking all such weapons from the time of their manufacture.'

163. Chapter VII, paras. 73-85.

164. Latest applications of radio frequency has improved the reliability of these systems, see our forthcoming report on marking techniques.

Adequate marking at manufacture and proper record-keeping in an international register should suffice.

5.1.2. Marking cartridges

Given new marking technologies like laser engraving and bar coding, the study shows that it would be possible, in addition to stamping manufacturer initials and calibre, to also indicate purchaser name and country of manufacture. This data, potentially encoded, could be marked on the base of the cartridge (DeClercq, 1998).¹⁶⁵ Microparticles encoded in colours visible through a microscope can also be added to the ammunition powder at manufacture, to facilitate tracing before and after shots are fired. This should be combined with the registration of transfers by the trader, broker and purchaser, as long as the data is saved and centralized.

Moreover, it was recently discovered that computer-assisted laser engraving can enable bullets to be individually marked with a code when cartridges are assembled (DeClercq, 1998).¹⁶⁶ Apparently, marking would stay intact after shots are fired.

5.2. Swiss studies

5.2.1. System of standard codes

According to a Swiss arms industry representative (Brachmann, 1999), industry officials whom he has met all said they would cooperate in establishing a broadly-accepted coding system. The code would include any number of desired specifications, such as serial number, country of origin, manufacturer code, model, calibre and importer.

Example of a proposed standard code format:
1234567 / CH / SIG / 090 / SAU / Calibre
Serial number/Country/Manufacturer/Model/Importer

Marking specific numerals and letters at time of manufacture, usually through stamping or laser-engraving, does not present a problem, but marking at import does. Material should be marked before its surface is treated with the anti-corrosion finishing treatment. It would be difficult to code every potential importer in advance and prior to treatment. Marking at import would also be technically difficult,

depending on the marking system. Information can be added, but a long code would be difficult to mark on a firearm's smaller parts.

The study suggests that only basic parts should be marked. The case, barrel, breechblock and lever of rifles, and the case, barrel and slides of handguns are considered basic parts in Europe. But in the United States, only the case is considered as such, and absolutely cannot be replaced, whereas all other parts can be replaced. In practice, however, all arms parts can be replaced. It is thus recommended to mark as many basic parts as possible at the manufacturing stage.

5.2.2. Invisible markings

A small arms seminar in Geneva addressed the issue of a marking that would be rendered invisible and detectable only by experts using special techniques and equipment (Meier, 1999). The goal is to make the removal of markings more difficult. Marking should no longer be detectable by touch, either. Grinding and drilling are the most common methods employed to remove markings.

It was suggested that the technique adopted should be cheap, employ generic technology and not affect a weapon's performance or safety.¹⁶⁷ One possible solution would be to add *metal inclusions* in the weapon's steel and aluminium alloys, which would enable easy identification of the arm's origin. Due to the small amounts of material required for this technique, however, it was thought to be extremely costly.

Another option would be *the inclusion of colour particles* in steel or plastic parts. However this would also be costly and would require a high number of particles to enable adequate identification.

Introducing variations in the design of a weapon's constituent parts could enable easy identification of its origin, but this could be highly costly if changes were subsequently introduced in the design.

165. The author does not provide much technical information.

166. See also an article by Dr. Norman Rubenstein: <http://www.members.aol.com/NRubenstein/gcontrol.htm>.

167. There is no evidence that techniques considered costly in the account would be better than the proposed method from a value for money perspective. Here, the Swiss seem to be promoting the techniques they have perfected.

Mechanical deformation would be an interesting solution. This method consists of marking the code in the weapon's frame or receiver by drilling tiny holes using a Vickers' hardness tester which measures how much pressure to apply when drilling. When the part is being finished, its surface is polished, thereby covering the approximately 0.5mm deep marking. Advantages of this method include its low cost, and the fact that the hardness testing tool is already used with precision in the production of metal parts for small arms. These markings can be rendered visible again by applying a chemical bath used in standard metallurgical tests. These holes can also be obtained using laser technology, which could apply markings up to 20mm deep in the metal. At this depth, even if the code could be located, it would be impossible to remove without seriously damaging the weapon.

As to the code itself, it was suggested that a combination of bar codes and bytes be used instead of letters and numbers to encode identifying information like country of origin, manufacturer and date.¹⁶⁸ It would thus be possible to use a system of 'invisible' marking that is cheap and easily retrievable with the proper technology, on condition that the political will to implement this technique exists (Meier, 1999).

5.2.3. Marking explosives

Switzerland is the only country that requires explosives to be marked for identification.¹⁶⁹ Heads of the Zurich Police Office for Scientific Research believe a universal method to mark explosive material would be an excellent way to control its proliferation (Schlatter, 1999). Information could be stored in the additive and decoded when needed. This additive could easily be integrated into the production process itself in small concentrations. The cost of the marker would decrease if the method were applied worldwide. Countries adopting this system would have to establish authorities responsible for controlling the marking process and the additive substances. In Switzerland, manufacturers have not complained about the additional administrative burdens.

The current method for marking commercial explosive material has been largely inspired by research conducted in the United States in the 1980s, in spite of the lack of regulations on marking

in that country. According to the Swiss experience, adding tags to explosives has not, to date, caused security problems.

Additives must:

- be easily detectable (addition of fluorescent colours);
- be easy to pick up (use of magnetic particles);
- be chemically stable for a significant period;
- remain in sufficient number after an explosion to enable particles on a given surface near the centre of the explosion to be counted;
- enable easy retrieval of encoded information.

In Switzerland, three polymers are used for this purpose. The first two are micro-particles containing codes in various layers of colour visible under a microscope, and the third stores data chemically that can be identified analytically. It would be enough to mark a single code to identify the manufacturer in order to determine the origin of an explosive. Nevertheless, once six months have passed or 300 metric tons of explosive material have been manufactured, the code would be changed to provide information on the period of production. For imports, an additional code would be assigned per batch, the content of which is limited to 150 metric tons. The Zurich Office for Scientific Research controls markings by sampling the batches.

This type of marking can only indicate the origin of the explosive (that is, the manufacturer or importer), and can only be used for analysing evidence in criminal investigations, without necessarily leading to a suspect's conviction. Worldwide adoption of this method would enable the control of proliferation.¹⁷⁰

Comments

First, it should be noted that additional methods would be required to track an explosive's circulation and identify responsibilities within its circulation.¹⁷¹ The transactions of each explosive should

¹⁶⁸. The combination will be determined by the respective positions and distances between the different points

¹⁶⁹. See section 3.3.2. of this report.

¹⁷⁰. Comments by Konrad Schlatter, *op. cit.*

¹⁷¹. The method presented does not give information on user obligations. Also, for each sale or transfer, the new owner, and thus, at the end of the line, the user, will remain unidentified with this system.

be noted in a centralized register, identifying the dealer, purchaser, and date of transaction. From a technical perspective,¹⁷² at the explosive reaction temperature (3,000–7,000° K), the magnetic tag (ferrite) becomes non-magnetic and the polymer tag, an organic substance, cannot remain stable. It would thus be extremely difficult to isolate the tags, particularly when dealing with destruction explosives, because the substance stays at the centre of the collapse and, moreover, is covered in thick dust that masks its magnetic properties. Users can also ‘sprinkle’ magnetic powder containing random polymers on the explosive to scramble identification. The exact composition of these particles would thus have to be known before assessing their effectiveness.¹⁷³ As it stands, these particles have little chance of surviving an explosion. Also, in countries where explosives are used on a wider scale than in Switzerland, such as the United States, the Swiss experience does not provide sufficient guidance (National Research Council, 1998, p. 8). Research should be conducted in parallel on new techniques for the detection of non-tagged explosives.

Finally, if this method can be used for explosives, why not also use it for ammunition powder to see whether traces are left on the cartridge or bullet after shooting? If traces are detected, users should be kept from reloading cartridges so as to keep marks from being scrambled.

5.3. United Nations study on ammunition and explosives (UN, 1999/3)

The report recognizes that there is no standardized and obligatory universal system for marking ammunition and explosives, nor a centralized register to keep information on marking, and considers the stamping of cartridges as the only marking technique because of the lack of detailed studies on alternative methods. It points out that, as there are no international constraints, merchants usually mark their initials without indicating the origin, marks are sometimes encoded or are simply lacking altogether. At most, as the only identification possible is that of the manufacturer’s initial on the cartridge case, component assembly and the reloading of used cartridges complicate tracing.

Regarding explosives, attention is focused on the difficulties of adequate marking.¹⁷⁴ The study

cites some preliminary work by the Swiss¹⁷⁵ and the existing 1991 International Civil Aviation Organization (ICAO) Convention on the marking of plastic explosives (UN, 1999/3), addressed in the next section.¹⁷⁶

Lastly, adding gamma ray emitters is cited as a potential new technology (National Research Council, 1998). Given the extremely high penetrating power and radioactivity involved, the safety of this method is still being examined.

While the study does not provide a solution to the problem of marking ammunition and explosives, it has the merit of broaching the topic and demonstrating that only a global approach can help overcome the difficulties in controlling transfers and establishing responsibilities.

5.4. Marking plastic explosives for detection

The Pan Am bomb attack on 21 December 1988, which killed 270 people in the skies above Lockerbie, Scotland, was caused by plastic explosives. Both plastic and sheet explosives barely have vapour pressure, and thus, no volatile components. These therefore go undetected by vapour detectors checking for explosives. The international community reacted quickly and the UN Security Council, through Resolution 635 of 14 June 1989, called on the ICAO to work towards establishing an international method for marking plastic or sheet explosives for detection, with the main goal of preventing acts of terrorism. Under major political pressure, a convention was drafted by the ICAO, accepted in record time and signed

172. Comments by Professor Georges Panou, Head of the *Service Exploitation des Mines* of the *Université Libre de Bruxelles*, December 1999.

173. We should note that tests are conducted on micro-quantities and it remains to be seen whether this tracing method can be successful after explosion of large quantities.

174. The industry mentions difficulties in technological feasibility and the high cost of this (according to the report, the Swiss studies estimate the cost of marking explosives at USD 0.08 to 0.09 per kg whereas most explosives cost USD 0.20 to 0.40), and notes that introducing additives to marking could lead to drops in performance and security.

175. See previous section.

176. See para. 80 of the report. These are plastic explosives mostly for the military market. The convention was drafted to detect these explosives during their transportation, to combat terrorism. Several manufacturers now add chemical tags to enable the detection of such explosives.

by 39 countries in Montreal on 1 March 1991 (ICAO, 1991).¹⁷⁷ This convention provides for inserting into plastic explosives tracer elements that emit enough vapour to be detected. Nevertheless, technical research has been slow and it took over six years for influential countries to ratify it.¹⁷⁸ The Convention entered into force on 21 June 1998, after the 35th ratification.¹⁷⁹

Four organic additives are prescribed as detecting agents, listed in the appendix of the Convention.

Note that the Convention addresses both military and civilian explosives, but specifies a deadline of fifteen years after the convention's entry into force for the destruction of unmarked military explosives, and three years for unmarked civilian explosives. Explosives integrated in authorized military engines are exempt.

While the Convention's definition of explosives is broad, extending it to additional explosives (see next section) is not recommended, as there are limits. But this can serve as an example for the marking of other explosives, ammunition and small arms, because its objective is to extend control to the military market.

Moreover, there are only three kinds of high explosives under this Convention, and their composition must include a binder. But some high plastic explosives like gum dynamite, gelatine and semi-gelatine dynamite do not have binders. Finally, if marked explosives are covered to keep them from evaporating, or have previously been put under a vacuum, their detection could be difficult.¹⁸⁰

5.5. Firearms marking from the manufacturing community's perspective

Marking techniques were at the forefront of the Swiss Department of Foreign Affairs' 'Workshop on Small Arms' held in February 1999¹⁸¹ to establish a global marking system. The Swiss, exclusively, outlined preliminary work on tracing explosives based mainly on their experience (see above).

In addition to governmental experts and other experts on small arms, the World Forum on the Future of Sport Shooting Activities (WFSA) was also invited to participate. WFSA was established in March 1997 in Nuremberg by firearms

organizations and manufacturers from 12 countries. Its headquarters are in Brussels and its secretariat is based in Rome. Founding members include the NRA, the Sporting Arms and Ammunition Manufacturers Institute (SAAMI) and the European Institute for Hunting and Sporting Firearms (IEACS). According to the heads of these organizations, they represent the majority of firearms manufacturers worldwide.

The WFSA representative first discussed manufacturers' know-how and experience in firearms, and their desire to cooperate with governments and international organizations. He then proposed that a working group of manufacturers, hunters, sport shooters and outside experts coordinate the establishment of a universal marking system. This group would review existing marking regulations and techniques in order to recommend a firearms marking system, and organize a world conference to evaluate and discuss these recommendations. The UN, other international and regional organizations, various governments and NGOs would be invited. After discussion, a final recommendation would be submitted to the United Nations for adoption. The group already made a proposal on firearms marking standards during a workshop organized in Sardinia (WFSA, 2000). Marking techniques were not discussed in this workshop.

Comment

As the Swiss government noted in its presentation at the Brussels Conference (Swiss Federal Department of Foreign Affairs, 1998), it is advisable that manufacturers are involved in the process of establishing an international marking system. Industry will indeed be the first concerned by this procedure. Any technical initiative that

177. See: http://www.undcp.org/terrorism_convention_plastic_explosives.html

178. Including France, Germany, the United Kingdom and the United States.

179. Belgium still has not ratified the convention. However, for several years already the IBE has refused to approve the transport of plastic explosives unless they are duly marked.

180. Comments by Professor Georges Panou, *op. cit.*

181. 'Workshop on Small Arms,' Geneva, 18–20 February 1999. A follow-up workshop was held on 22 and 23 November 1999 in Geneva, but did not shed any new light. However, there was greater consensus favouring a universal marking system.

excludes manufacturers would be misguided. However, contrary to the WFSAs suggestion at the Geneva workshop, this should not mean that the creation of the system should be entirely left up to the manufacturers. WFSAs members' criticisms of efforts within the UN for stepped-up control of small arms, or of initiatives led by Canada and Japan, are well known. The NRA is overtly hostile to the harmonization of controls and laws, and has lobbied the US Congress to block funds for UN small arms programmes¹⁸² (Goldring, 1997/2).

Proposals from manufacturers—whether members of an association or not—or from independent experts should be taken into account in a working group composed of technically-competent persons designated by arms manufacturers, as well as various organisations interested in the problem of small arms and ammunition. The control of trade to eradicate the illicit market should have broad consensus, and an adequate marking system would benefit industry and the international community as a whole.

5.6. Cooperation with defence industries

In June 1999, Switzerland and Germany organized a 'Workshop on Industrial Aspects of Limiting the Proliferation of Small Arms and Light

Weapons'¹⁸³ held in Baden, Switzerland. Approximately 70 participants representing the governments and defence industries of 30 countries discussed this problem in workshops.

They first pointed out the excessive stocks of and easy access to small arms, then mostly discussed the role that manufacturers can play in controlling the availability and misuse of these arms. Strengthening legislation, harmonizing export criteria and establishing a global code of conduct was also discussed.

The importance of cooperating with manufacturers to implement concrete measures for the improved control of the 'grey' market was stressed. Manufacturers can contribute their expertise in the marking and destruction of small arms and in export. It was decided to continue the dialogue. Continued work on transparency and common criteria for small arms transfers will include the marking and destruction of these arms, safe storage and strengthening control of the grey market.

182. See the letter from Tanya K. Metaksa of the NRA to Senator Jess Helms on 11 January 1996: <http://www.nra.org>

183. 'Workshop on Industrial Aspects of Limiting the Proliferation of Small Arms and Light Weapons,' 28-30 June 1999, Baden, Switzerland.

6. Recommendations

In addition to the specific recommendations outlined in chapters 3 and 5, these are more general recommendations, with the understanding that marking and tracing are not ends in themselves, but means to strengthen controls on the transfers and spread of arms.

6.1. Marking

(Berkol, Schütz, Wéry, 2001/1)

Some works on developing a universal marking system were discussed in the preceding chapter. While recognizing the need for a programme entailing cooperative research on an international scale, handled by a UN working group and composed of independent experts, arms industry experts and politicians, we propose the following general comments.

6.1.1. Marking explosives

The main motivation for marking explosives is to detect and prevent acts of terrorism. Reaching global agreement on the tracing of explosives through generalized marking, even while technically feasible, is difficult for various reasons. Firstly, so many explosives are in circulation that tracing is unquestionably technically difficult: a research project to identify, evaluate and create tags that satisfy the various criteria should be conducted (National Research Council, 1998).¹⁸⁴ Next, the industry has shown some resistance because the additional cost of the marking is currently comparable to the production cost of some cheap explosives. They also present technical difficulties like the contamination of the explosive and/or of the mined product. The concept of production cost is fixed on short-term considerations, and presupposes that products are necessarily used correctly, and it is difficult to remedy the 'side effects' that develop from the mere existence of the product. The costs related to indirect damage are difficult to quantify because they do not involve the product's technical quality. Because of this, the manufacturer and user can find bearing the brunt of costs related to remedies unacceptable. Yet, safety, even if indirect, is equally as important as the quality of the

product, and in other industries, spending on safety sometimes exceeds spending on product quality.

Another thorny issue regarding explosives mainly for civilian use concerns the employment of ammonium nitrate (NH₄NO₃) as fertilizer.¹⁸⁵ Ammonium nitrate is by far the most reliable blasting agent for illicit use. It is difficult to imagine how a farming business could be controlled in cases of misuse. After explosion, components become gaseous and leave no trace. Contrary to dynamite, however, ammonium nitrate is not easily flammable and must be activated. One option would thus be to control initiators and regulate priming. Also, for bombs, NH₄NO₃ has to be mixed with high explosive charges like hexogen and octogen, which could also be controlled. Detonators, often in metal capsules, can be marked. Non-electric initiators can also be marked because the plastic tube they are in is not destroyed in the blast. But the problem of marking will remain for detonator fuses (plastic tubes containing penthrite) and rapid safety fuses which leave no trace. The possibility of marking detonators rather than explosives (fertilizer-grade NH₄NO₃), using radioactive substances should be explored.¹⁸⁶ Another solution would be to render ammonium nitrate inert using dopants, but to date, research has been inconclusive. Protocols for standard tests to measure the blasting capacity of ammonium nitrate fertilizer should also be developed, and only non-detonating fertilizers should be sold in retail. Purchasers should also have to present identification at time of purchase and the seller should keep a record of such transactions.

Finally, there should be improved controls on access to precursor chemicals,¹⁸⁷ either by keeping records of sales and setting up a permit and licence system for purchasers and dealers, or by controlling manufacturer sales and requiring products being sold to be rendered non-detonating by using additives, for example (National Research Council, 1998).

184. According to US experts, using different additives for different classes of commercial explosives could complicate collection, recovering and analytical protocols, and their premature introduction could harm the subsequent development of better methods.

185. Ninety per cent of NH₄NO₃ produced is used in farming.

186. Authors' interview with Professor Georges Panou, *op. cit.*

187. In particular certain nitrates and chlorates.

6.1.2. Marking ammunition

While explosives are often marked with chemical tags in response to international terrorism, additives are not as often used to mark ammunition.¹⁸⁸ The most commonly-used technique is to mark the metal part of the cartridge by stamping, engraving or casting, as described above.¹⁸⁹ Effective tracing of ammunition would probably require the use of a combination of two or more marking techniques, because the completeness of information collected can vary depending on what condition the ammunition is in when controlled, that is whether pre- or post-fire, and whether its original packaging is available. If the packaging can be retrieved, the information it displays should enable contents' origin, manufacturer and initial transaction to be traced.

Ammunition can be marked in variety of ways using its constituent parts, including the cartridge (round), powder, bullet and percussion cap.

Marking the cartridge

The goal is to have access to information pertaining to ammunition both pre- and post-fire. All the techniques for marking metal parts can be applied. While the surface is limited, it should still be possible to mark codes containing information like the country of origin, manufacturer, batch number, date of manufacture, model, and calibre. Stamping and laser engraving seem to be the best-suited techniques. It might also be possible to introduce a minuscule insert—for example, in the shape of a ball—into the brass, which is only visible through an electronic microscope.¹⁹⁰

However, since cartridges are usually produced in different facilities than ammunition, this could be problematic from a manufacturing perspective. It could take time to transmit the information for registration on the one hand, and on the other cartridge manufacturers might not always be able to meet marking requirements. The issue of adaptation should be re-examined.

In terms of use, there are two problems: first, cartridges can be collected to hide evidence after shots have been fired;¹⁹¹ second, in cases where used cartridges have been reloaded with a different powder and the cartridge is in the hands of a different end-user, pinpointing responsibility is complicated. These problems can be resolved by adequately marking the powder or bullet.

Marking powder

Ammunition powder can be marked with chemical or physical additives, radioactive or not.¹⁹² This technique has already been used in certain explosives, but not ammunition. If this type of marking were technically feasible, one or possibly several of the ammunition's parameters could be identified, pre-fire, through a simple chemical analysis or examination of its physical properties.¹⁹³ After use, for reasons outlined in section 5.2., most additives do not survive shooting and are projected in an array of directions.

Additives such as traces of chemical, explosive, or crystallographic elements that are difficult to synthesize and unique to each manufacturer could be used to obtain the manufacturer's 'signature'. These elements should be used strictly for this purpose and be extremely difficult to acquire on the market to keep them from being copied.¹⁹⁴

Marking the bullet

To curtail the problem of 'disappeared' cartridges and the difficulties of recovering additives after shooting, the bullet could be marked, for example, by computer-assisted laser. Another option would be to dope the bullet by introducing specific chemical and/or physical tags or using

188. See Chapter 5 of this report on additives used mainly with explosives.

189. See Chapter 5 for techniques on marking metal parts of ammunition. For the various types of marks normally applied to cartridges, see Ezell, 1988.

190. Authors' interview with heads of the *Service d'Exploitation des Mines* of the *Université Libre de Bruxelles* in November 1998.

191. In the Brabant killings in Belgium, for example, the cartridges had disappeared. For larger scale use, as in war, this seems less likely however.

192. Examples include the aforementioned gamma-ray emitting additives.

193. For this kind of marking, the number of parameters stored depends on the number of additives, which risks being rapidly limited. One could, however, foresee the possibility of a chromatographic or X-ray diffraction spectre with various additives giving several bits of information at a time. Traces of chemical elements could be analysed by atomic absorption spectrometry or mass spectrometry, depending on the case.

194. For example, some explosives, like *Dupont de Nemours' 'Tacot'*, cannot be synthesized elsewhere or purchased by just anybody. Protactinium nitrate is another rare but radioactive explosive dopant that could be used. Rare and expensive chemical additives can also be used for this purpose because for mass production, the cost per bullet would be minimal, which would not be the case for counterfeited production, which is usually limited.

other inclusions mentioned above. A bullet that is found after a shooting—in a victim's body or an object—could be analysed to reveal information concerning the ammunition. The possibility of marking the bullet would thus be an effective solution and should be further examined.

Marking the percussion cap

The primer is contained in a metal cap, usually made of brass or copper. This cap could thus be marked with a suitable technique like laser engraving. The cap could also contain inclusions or additives. The possibility of using manufacturer-specific explosives should also be examined. After a shot has been fired, the cap could be recovered and analysed. Any traces of additives contained in the cap or in the explosive residue that might remain on the cap could be analysed.

Conclusion

One potentially effective solution would be to combine different marking techniques on different components of ammunition. A thorough analysis is needed, however, to determine the best combination of methods.

In any case, reliable tracing would require that ammunition be marked and its every transaction registered. Since by its nature ammunition is consumed after use and that this fact can be advanced to explain its 'disappearance', it is important that in addition to being registered, it is also subject to periodic controls through the user or holder.¹⁹⁵

Finally, a potential solution to distinguish between ammunition and arms intended for civilian markets from those for military markets would be to produce different calibres for each market (De Clercq, 1998).

6.1.3. Marking small arms

We should keep in mind that small arms have long been marked using traditional techniques like stamping, engraving and casting. However, these markings are not indelible and the absence of laws on reliable marking have prevented the use of other techniques from being explored. The very recent sensitisation of the international community to the problem of tracing has brought attention to the importance of marking, and has prompted exa-

mination of other techniques such as laser engraving and 'invisible' marking by mechanical deformation mentioned in Chapter 5 (Berkol, 2001/1).

Tags have been used for some time to identify and control strategic arms,¹⁹⁶ conventional arms, chemical weapons and nuclear warheads. Intrinsic tags, such as surface distortion, inclusions for ultrasonic signature, and bar codes, have already been used in conventional arms and nuclear missiles (De Volpi, 1991). Other physical properties of taggants (crystallographic, colorimetric, electronic or electromagnetic) have also been explored, but have not been sufficiently exploited to date (De Volpi, 1991).

Firearms are much easier to mark than ammunition or explosives. Firearms have a greater surface area and surface-depth, and it is unlikely that marking would affect their performance. Moreover, as they are relatively expensive, the cost of applying even a sophisticated marking technique would be relatively low per unit produced. Initial research demonstrates that it would be possible to quickly identify a reliable, technically simple and cheap method of marking.

The country of origin, manufacturer, model, period of manufacture, serial number, batch number and possibly additional information could be marked in compliance with a universal code.¹⁹⁷

In practice, the marking of firearms should be undertaken at manufacture, since marking at a later stage and outside the original manufacturer's facilities would be problematic and risky. To avoid potential falsification, marking technology must not be accessible to various players in the arms transfers circuit. In the event that a problem should arise and in order that responsibility may be determined, marking should not be alterable. This supports arguments against the implementation of purchaser marking at import advocated by some researchers, or at the time of a new transaction. Nevertheless, indicating the importer, if known at the time of manufacture, could be very useful for end-user certificate controls. Centralised record-keeping of all transactions, coupled with periodic controls,

195. See section 6.3.4. on controls of stocks and registers.

196. Controls are stipulated in strategic arms treaties (e.g. START - Strategic Arms Reduction Treaty).

197. Such as the UN Committee of Experts code on dangerous goods (ONU, 1993, para.4.1.2), which is marked on packaging.

based on original markings should enable a given firearm to be traced anywhere in the world.

Marking can be applied to various component of a firearm. Since all parts are replaceable, the focus should be on the obligatory marking of the firearm's essential component, defined as such by the manufacturer, and which, in theory, should not be replaced. Replacing the basic component should thus be banned, except in cases of standard exchange for a new, duly marked and registered replacement.

One important parameter is the place of manufacture. Manufacturers could, for instance, sign what they produce. Thus, arms alloys could be marked with manufacturer-specific, rare chemical elements that would preferably be difficult to synthesize or find on the market.¹⁹⁸ Another possibility would be to introduce a minuscule insert observable only under an electronic microscope, as suggested above for ammunition. In addition to the signature, a combination of metallic inclusions could create a code enabling different information to be marked at the same time. Even if these specific materials are expensive, given the small amount that is needed for marking (traces or micro-inclusions), the additional cost per weapon would not significantly affect its price.

This problem cannot solely be examined from a profit margin perspective. We highlighted the substantial cost of armed conflicts and various abuses in the use of small arms above. This cost should also be factored in. Rejecting *a priori* a method solely on the basis of its implementation cost is unacceptable. More in-depth scientific and economic considerations, the potential ease of use and accessibility of the method, and cooperation among all actors, whether directly involved or not, are essential.

Double marking

In order to satisfy the requirements of simplicity and indelibility, it would be advisable to introduce on the one hand classic marking that would involve stamping basic information, legible by a law enforcement officer, and on the other hand an essential marking that is more sophisticated and indelible (accessible in case of necessity and that would render the arm unusable if falsified or tempered with). This second marking could be done on weapon parts that are difficult to handle

after manufacture—for instance the breech—using techniques such as laser engraving or laser perforation directed by computer, which can inscribe markings in the space of a few square millimetres. Attempts to obliterate this marking using classical methods would render the arm unusable, and falsification would require a very sophisticated technique, the results of which would be unsatisfactory (i.e. it should normally be possible to detect modifications upon control).

In the latter case, the laser marking technique can be used to mark the serial number itself or as a means of coding the number by using a matrix system. There are also laser marking techniques that print bar codes which have the advantage of being invisible to the naked eye¹⁹⁹.

With regard to essential marking, another possibility would be to stamp parts of the weapon which, after manufacture, one cannot access without damaging it. However, the authors suggest using the laser marking technique, as it offers several advantages (Berkol, Schütz, Wéry, 2001/2):

- It is a rather simple technology and represents an acceptable cost by unit of production;²⁰⁰
- It can be used on a great number of parts because of its very small size;²⁰¹
- There is no physical contact between the laser and the support to be marked, which permits its use on sensitive and not easily accessible parts;
- It can be used to mark different kind of materials, especially composites and plastics that are used in new generation small arms and for which stamping is not suitable;
- It is applicable to small arms already in circulation;
- The risk of falsification, although technically possible, is significantly reduced and is certainly not profitable to traffickers.

198. For example, 'chemical rare earth elements' in quantities of 14, taken 3 at a time, can produce many different combinations. They can be assayed by mass spectrometry.

199. NdYAG (Neodymium, Yttrium, Aluminium Garnet) type lasers; see <http://www.controllaser.com>

200. The price for a laser varies between USD 40,000 and 100,000, which is the usual price of a precision laboratory apparatus that could be rapidly amortised through mass production.

201. The cost-effectiveness of laser marking over stamping would be even more apparent in the case of longer markings (such as legal excerpts) or more complicated ones, such as logos, which are increasingly required by buyers.

6.2. Tracing

To date marking has only been attributed a limited role in curbing the spread of small arms and ammunition. This is because the registration of this material and its transactions is not yet required by law, with the exception of certain national registers that contain data on a limited number of firearms in private hands, and these have only existed for a few years. The minimum information to be recorded includes:

- The product description;
- The content of the marking;
- The name and the location of the owner;
- The date of entry in the register;
- Information concerning each transaction, namely:
 - a) The sender, intermediary (if relevant), and recipient;
 - b) The departure, transit and destination points and corresponding dates;
 - c) The export, transit and import licenses (quantities and lots corresponding to the same license);
 - d) The end-user certificate;
 - e) The shipper(s);
 - f) The control organisation;
 - g) The nature of the transaction (commercial, state-to-state, non pecuniary), and possibly the insurer and the financial institution.

Given the current situation, tracing—that is, tracking an item's path to pinpoint its location and track its source—is extremely laborious. Chapters 1 and 3 outlined the major reasons for this: the absence of a centralized register containing item registration and information on transfers, and the lack of harmonization of various legislation, which is also often too permissive.

Chapter 3.2 pointed to certain changes that should be made in Belgium concerning laws on export and possession by private citizens, and focused on existing control mechanisms. Nevertheless, a new control and tracing mechanism is needed in order to control the entire line of supply of arms and hold the various players accountable while minimizing the likelihood of impunity.

Arms and ammunition are not like other goods. Their sale should not be addressed separately from their use, and borders should not serve to protect

one or other intervening party from sanctions in the event of illicit use or transfers. Today, national laws are such that legal proceedings are confined to the country in which they were initiated and, as there is a lack of harmonization, the process of acquiring information on an international level is so slow that it compromises investigation results (UN, 1996/1 and 1998/1). In most cases investigations do not even extend beyond the borders of the country where they began.

The international community has only minor control over what happens in countries embroiled in armed conflict, and states are finding it extremely difficult to contain crime and trafficking. It is therefore not enough to combat the consequences of the spread of small arms. Most arms industries are located in industrialized countries where states can act on manufacture and exports. Even those industries located in developing countries are usually state-controlled. It would thus be possible to establish a binding international system for governments register production and transfers so as to control responsibilities at any given moment.

Issues can arise that lead to the problem being considered only in light of one or other of its aspects: for example, the issue of arms already in circulation is significant and solutions will have to be found. However, this should not detract from the importance of controlling new production, lest hundreds of thousands more small arms be added over the following decade to those already in circulation.

One of the major limitations of the current actions is the singling out of the problem of illicit transactions only.²⁰² The licit trade cannot easily be separated from the illicit since arms usually start off on the legal circuit before becoming entangled in illicit activities. A comprehensive approach that considers the problem in its entirety is thus required.

However, a comprehensive approach also requires that other limitations be overcome. One of the most difficult elements to manage is the distinction between civilian and military arms, since the dividing line is blurred at many points.²⁰³ Laws concerning the transfer and possession of arms sometimes address both military and civilian

202. See Chapter 4, and the UN 2001 'Conference on the Illicit Trade in Small Arms and Light Weapons in All its Aspects.'

203. Chapters 1 and 3 address this problem.

weapons, or only one or the other category, depending on the country.²⁰⁴ Controlling the armed forces' weapons after delivery is not addressed in legislation. It remains that most arms used in violent crime and internal wars originate in military circles. Focusing strictly on the civilian market and setting apart trafficking in civilian arms therefore appears to defy all logic. What about trafficking in military arms? How can we close in on the point of overlap from licit to illicit?

Given the problems that arise in practice, an international control mechanism should thus be established and national legislation should be adapted.

6.3. Creating an international registration and tracing mechanism

Following the example of controls on packaging compliance for the transport of dangerous goods by independent bodies authorized by various international transportation associations and states, controls on the manufacture, transfer and monitoring of small arms and ammunition could be overseen by an international body dependent on the UN. It would have offices in every member country, would keep an international register centralizing data supplied by states and would have the right to carry out checks and conduct investigations involving the tracing of small arms and ammunition.

This agency would be responsible for increasing transparency on this matter and would be the first step towards the creation of an institution for controlling and limiting arms exports in the long term. This would of course imply the adoption of an international treaty on the manufacture, transfer, possession and control of arms and ammunition to strengthen and harmonise laws at the international level.

6.3.1. Role and structure of the International Agency

Endowed with central headquarters, the Agency would act in connection with national offices dependent on states (that is, states which sign and ratify a convention drafted within the UN framework). This convention could be conceived as an extension of the Vienna Firearms Protocol. States would be required to provide the Agency

information on their small arms and ammunition production, their inventory, transfers and after-sale follow-up. This would cover both civilian and military markets and would include transactions among states, private businesses and private citizens.

All related information would be kept in a centralized register and would be confidential. The Agency would be responsible for keeping records of all existing arms and ammunition and tracking their movements. This implies establishing and implementing an international marking system. The Agency could be called on to provide a recommendation or to carry out inspections of production or marking sites.

This register could first act as an extension of the UN Register on Conventional Arms²⁰⁵, which is currently limited to major weapons, but this would be far from ideal. The current UN register is not binding and many states fail to declare their arms acquisitions. However, until the convention establishing this international agency is adopted, certain major calibre small arms could already be included in the current UN register and could later, through this convention, establish a separate but complementary register for small arms and ammunition.

National offices or, possibly, national bodies authorized by the Agency could be the data record-keeping relay between states and headquarters. The Agency could work with control bodies authorized to undertake specifically assigned tasks.²⁰⁶ It should also cooperate with the various relevant state authorities and Interpol. If national officials are not able or willing to investigate breaches of the established registration and tracing system, the Agency should be able to initiate investigations which could extend to an international scale.

Agency personnel should be trained for their specific duties. There should be distinct personnel for controlling military and civilian markets, as well

204. In Belgium, for example, there is only one law on exports, whereas the possession law is directed mostly to private individuals.

205. The register was established through UN General Assembly Resolution 46/36 L dated 9 December 1991.

206. Examples include the IBE in Belgium for control of ammunition packaging, or the SGS (*Société Générale de Surveillance*) for the quality and quantity control of all goods at the request of the buyer or seller.

as separate registers to collect information on civilian and military transactions. A similar subdivision could be made for matters pertaining to military and civilian markets. Narrow cooperation involving all divisions would of course be necessary.

National offices would be financed by states, which could be called on to collect contributions from manufacturers, dealers and owners of arms and ammunition (Lock, 1999).²⁰⁷ Headquarters would be financed by the UN.

National offices would regularly confer with country officials for the purpose of exchanging information, and national office representatives would meet periodically at Agency headquarters.

6.3.2. Production

States would have to gather information needed to identify the firearm or ammunition from the producers, including manufacturer, date of manufacture, type, model, serial number, calibre, packaging method and inscriptions and, possibly, the destination and/or importer. This information would be submitted to the Agency's national office. Once the item's compliance with the inscriptions has been verified, this office would keep a record of this information and transmit it to the central register.

6.3.3. Sales

International transactions

The export licence should first be acquired through the usual national procedure. Exporters and importers would immediately relay information on transactions, including information to identify the merchandise, to the Agency's national offices in the countries involved. The data would be checked both at export and at import and communicated to headquarters. In cases where data supplied by the states involved in the transaction do not comply, national offices would have to provide information on possible errors or deviations. If, after some time has passed, information supplied by the dealer and purchaser still conflicted, the Agency would have the power to start an investigation, with access to the case's administrative documents and merchandise.

One solution to avoid these problems and possible deviations during the transport or via

springboard countries would be to impose sales on a CIF basis (Cost, Insurance, Freight included in the price). The products would therefore belong to the seller and would fall under his responsibility until their delivery to the buyer.²⁰⁸ Thus the exporting country would control the transaction until its receipt by the purchaser in due form under the surveillance of the importing country's authorities and the local Agency.

The Agency should also be informed of non-monetary transfer arrangements within a state so as to be able to track the material at any given moment. Intra-community sales, such as within the EU, should abide by the same procedure as for other exports, substituting the export licence with the intra-community document.

Resale

Normally, the existence of end-user certificates imply that exported small arms and ammunition should not be resold by the buyer, except with due authorization from the exporting country. Nevertheless, this clause is not respected in practice. This type of resale occurs all the time and the country from which the weapon originated cannot intervene. As a solution, the proposed convention would force the original purchaser wishing to resell material to obtain permission from officials whom would then forward all the required information to the Agency's local office. This office would in turn transmit the request back to the country of origin for approval. If the said country does not approve the resale, the owner would either keep the material or turn it over to the state, possibly in exchange for compensation. Material that ends up in the hands of the state should either be recycled by the manufacturer or destroyed. If resale were authorized, responsibility would be re-transferred to the reseller and new purchaser.

207. German researcher Peter Lock discusses a system whereby taxes and deposits would be paid by producers, dealers and users of small arms to render them responsible. Lock also suggests paying a civil responsibility insurance to cover in part public damages caused by small arms, particularly as regards public health.

208. For example, for exports of sugar from the European Union, the obtaining of subsidies (that are as important as the price of sugar on the international market) is conditional upon remittance to the authorities of maritime bills of lading and manifestos certified by the harbour authorities at destination. In these conditions, the sellers can only sell under CIF terms in order to ascertain the effective import of the product by the recipient.

Sales to private citizens

The Agency's national office could also be responsible for collecting any information pertaining to sales to private citizens within a country. Narrow cooperation with local officials, particularly the police, would be indispensable. The time lapse between the transaction and its notification should be minimised, made possible mainly through widespread use of computer technology. Information on arms seized by security forces should also be forwarded to the Agency's national office.

All manufacturer sales to dealers would be controlled and registered at time of delivery. Sales to private individuals could only transpire once the purchasers' licence for the possession or holding of a firearm has been verified by the seller, who would be responsible for the success of the transaction.

Resale among private individuals would require prior verification of necessary authorization by concerned officials.

6.3.4. Stocks and registers

Manufacturers

Manufacturers' registers should be kept in electronic format. Inventory and all transactions should be communicated to the Agency's local office, for instance on a monthly basis. The local office would in turn periodically check inventory so as to verify compliance with the information in the registers. Data would be confidential and could only be used for official investigations.

If a business were to close its doors, its register would be submitted to the Agency, and its inventory could be resold under the control of local authorities.

Dealers

These are wholesalers and retailers selling arms on the civilian market. Their registers would be kept in electronic format and their movements would be communicated to the Agency periodically (e.g. monthly) by communicating destinations and documentary evidence of purchaser licences. The Agency would periodically check their inventories.

Items sold on the military market usually either pass from the manufacturer to the user or through merchants or brokers. Both merchants and manufacturers would periodically transmit the in-

formation contained in their registers to the Agency, whose subdivision in charge of the military market would keep these records.

Brokers

Brokers act as intermediaries in sales transactions. They theoretically do not hold stocks of their own, or else only strictly for the duration of transport. Brokers should thus provide the Agency office in their country of residence details on the transaction beforehand, and request a licence from officials, even if the material does not pass through the broker's country of residence.²⁰⁹ Brokers should be held accountable for the material until the purchaser has received it.

Security and defence forces

Any change in or movement of armed forces' stocks should be communicated to the Agency.

Following the example of controls administered by multinational teams verifying compliance with the Treaty on Conventional Armed Forces in Europe (CFE),²¹⁰ armies' stocks in small arms and ammunition could be periodically inspected by the military division of the Agency's national offices. Armed forces should communicate their stock to the proper authorities, just like any other user.

This kind of procedure would contribute to preventing conflicts. When arms are sold to a country on the basis of end-user certificates and arms export law criteria, conditions within a recipient country at a given moment must be taken into account in the short-term. But given the long life of small arms and ammunition, changes occurring in the country that could distance it from these said criteria could also arise in the longer-term. Periodic inventory checks and a close watch on small arms movements would enable early warning of potential conflict in a given country with a view to identifying the quantity of excess arms.

6.4. General comments

- To ensure the successful implementation of the proposed method, marking should be universal

²⁰⁹. For example, under German law, German brokers must obtain a licence for their transactions.

²¹⁰. Signed on 19 November 1990 in Paris.

and the system should be accepted by manufacturers, dealers, purchasers and states. National legislation should be strengthened and harmonized accordingly.

- Legal studies should be conducted to pinpoint where responsibility lies and establish penal provisions. While it is up to arms users to respect human rights, producer and dealer obligations vis-à-vis the international community should be redefined to take into account how the arms they produce are put to use. Appealing to an extraterritorial jurisdiction to regulate the small arms trade should be examined, factoring in criteria based on international humanitarian law.
- Manufacturers, dealers and brokers should be state-registered before they can engage in the manufacture of, or trade in, small arms and their ammunition. Certain recent initiatives suggest registering transportation agents also (UN, 1999/4; UN, 2001/12). Particular attention should be paid to brokers who often play the role of intermediaries in the diversion of material to the illicit market. Standards for the purchase and possession of these arms should also be redefined.
- A good intrinsic control would be to oblige transport agents, insurers and financial institutions to accept only those transactions whose documents comply with existing laws and conventions.
- The destruction of surplus military arms and ammunition seems unavoidable if we want to prevent their diversion to the illicit market and avoid excessive arms build-up within certain armed forces and factions. It would be an effective tool to curb the spread of small arms. Destruction methods vary and should be adapted on a case-by-case basis (DeClercq, 1999).
- Sales of security and defence forces' arms on the civilian market (e.g. to private citizens, arms dealers, etc.) should be prohibited.
- Export and import licenses for several commodities (dairy products, flesh-coloured products, pasta, processed foodstuffs) are submitted to highly coercive financial security bonds in various countries. A similar security bond system could be applied to small arms sales.
- The records should be kept in the registers until the arm passes into the antique category according to international norms.

Private citizens

Any firearm, regardless of its use, would have to correspond to a permit in the authorised licence records and be registered.

Gun owners would be responsible for how their firearms are used. The arm would be periodically inspected, for example on an annual basis.

As regards ammunition, standards should be established to define how much ammunition a private individual could purchase and store. Reloading cartridges should be prohibited, and used cartridges could be collected for recycling.

Storage methods should depend on the firearms' use. For example, sporting firearms should be kept in clubs, which would be responsible for keeping records of firearms owned by their members. Arms falling into other categories, such as hunting rifles for example, should be unloaded before they are stored or transported. Firearms should be used strictly within the scope of their intended use, determined at purchase as indicated on the gun owner's licence. They are to be used by that person alone and should never be lent to anyone else. The same holds true for ammunition.

To contribute to effective tracing, it might be useful for private individuals to keep their own personal registers for each arm in their possession, in which they could note for instance the ammunition they purchase and use, as well as the date and place of use. This personal register could be checked by the Agency or local officials.

When possession of an arm is no longer justified (e.g. if a person no longer actively hunts or engages in sport shooting), the arm should be surrendered to the officials who should ensure that it is destroyed or recycled. However, if gun owners wanted to keep their firearms, they should be obliged to transform them into collection firearms and should be prohibited from purchasing ammunition.

Production under licence

The terms of an agreement for production under licence are often violated, either because of lack of controls on production in the country under licence, or by slight modifications in design to bypass agreement constraints (Swiss Government, 1999). The international community should recognize the major role this type of production plays in the proliferation of small arms and

ammunition, mostly because factories have to export to ensure the viability of their business. The following measures should thus be adopted to contain such production:

- Quantities produced should not exceed the needs of the producer country;
- Similar models produced by the same factory should fall within the framework of restrictions on production under licence;
- Exports of products under licence should be limited, or preferably prohibited;
- Any new licence acquisition should be banned.

6.5. *Small arms already in circulation*

Concerning small arms already in circulation on the civilian market, in each country their owners will have to be called on to present them to competent authorities so that they can be marked and registered in keeping with the new system. Gun owners could be given a time frame of six months or a year, for example, to comply,²¹¹ after which time any arm not in order would be considered illegal and its owner subject to severe sanctions. As an incentive, holders who surrender their firearms could receive a 'buy-back' payment or recycling bonus. Also, holders who are not yet registered could be guaranteed amnesty to encourage them to do so and non-confiscation of the firearm insofar as the law allows. Penalties could be reduced or done away with for those who voluntarily hand in illicit firearms to officials. This would enable the identification of a portion of the arms in circulation and the elimination of a certain percentage as well.

In terms of ammunition, marking what has already been sold would be tricky. Nevertheless, requesting voluntary declarations for the purpose of registration could be an option. A buy-back campaign could be launched to eliminate as much material as possible. It would be useful to prohibit private individuals from handloading their cartridges. Cartridges could be repurchased by officials for recycling.

The inventory of military arms and ammunition already in circulation could be checked and their registration administered by authorities of each state on the basis of users' voluntary declarations. The current excessive arms surplus could be eliminated so as to bring stocks within required

limits. The time frame for registration could be longer for armies and security forces than for civilians (e.g. five years). For marking, existing inscriptions could be used, or in some cases, a new serial number could be stamped. Any item registered again would fall under the system described above.

6.6. *The 2001 UN Small Arms Conference (Berkol, 2001/2)*²¹²

As recommended in the Report of the Group of Governmental Experts (UN, 1997), the UN General Assembly in its Resolution A/53/77E decided to hold a 'United Nations Conference on the Illicit Trade in Small Arms and Light Weapons in All Its Aspects' no later than 2001. The Group sketched out the objectives of the proposed Conference in its report A/54/258 of 19 August 1999. The legal aspects of the small arms trade, the large number of these weapons that are produced for military purposes and the problem of ammunition were highlighted, for the first time, as issues that needed to be addressed. Though quite timid, these recommendations represented important progress. The illicit trade in arms and the civilian market cannot, in fact, be tackled separately from the legal trade, the military market and ammunition. It was therefore decided to focus the Conference on 'the illicit trade in small arms and light weapons *in all its aspects*.'

6.6.1. *The Preparatory Committee*

Three sessions of the Preparatory Committee (PrepCom) were held in New York in February 2000, January 2001 and March 2001. On the basis of informal contacts that PrepCom Chairman Ambassador Carlos dos Santos had with country delegations, a Draft Programme of Action (UN, 2000/2) was presented to PrepCom II in January and was accepted by participants as a basis for negotiations for a final Programme of Action.

After the incorporation of various comments and proposals made during PrepCom II on the original draft, a second draft programme (L.4/

211. The new Canadian law (*op. cit.*) provides an 18-month period of grace to put current licences in order and a maximum of 5 years for special cases.

212. The report gives a detailed analysis of the process and of its results.

Rev.1) was presented to delegations and debated during PrepCom III in March 2001 (UN, 2001/4). A large number of states saw this draft as balanced and fair. Some delegations, such as those from China, Russia, and South Africa, opposed any significant changes to it to avoid long and controversial discussions. Yet, a group of states, including the EU countries, Canada, Norway, and Switzerland, made various proposals to strengthen it, while others, including members of the Arab League, Cuba, and Israel, argued for a further narrowing of the document and refused all control measures of regional or international scope on the grounds that the Conference mandate was restricted to the illicit trade. Some smaller countries feared that controls on the licit trade would hamper their ability to buy and export weapons and for this reason preferred a final Conference document that would not be legally binding. This approach in fact enjoyed broad consensus, though some provisions of the final text provided for the future development, or at least exploration, of international instruments in such areas as tracing and brokering. Nevertheless, some states opposed any improvement of these issues. Finally, a compilation of the proposals delegations had made was prepared for the July Conference, with the Draft Programme of Action remaining unchanged.

The measures set out in L.4/Rev.1 focused on illicit manufacture and trade, as well as the management of stocks and the storage and destruction of surplus and illegal small arms. Some of its provisions related to issues of transparency, information exchange and the diversion of small arms, as well as the activities of traffickers and brokers. Measures concerning marking and tracing of small arms were also featured in the document. Of particular importance, Article 1(c) of Section IV called for follow-up action 'to strengthen and further develop measures contained in the Programme of Action, including negotiation of an international instrument to identify and trace the lines of supply of small arms and light weapons.'²¹³ Other provisions related to international cooperation and assistance, as well as national, regional and international mechanisms for the implementation and follow-up of the Programme of Action.

6.6.2. The Conference

The Conference was held from 9 to 21 July 2001 in New York under the presidency of the Colombian ambassador Camilo Reyes. The mornings of the first week were taken up with the statements of States Parties, mostly at the ministerial level. The second week, the President presented the assembly with a revised Draft Programme of Action taking into account some of the proposals compiled during the third PrepCom (UN, 2001/5).

Statements

As one of the main themes of the Conference was the marking and tracing of small arms and light weapons,²¹⁴ practically all delegations emphasized the importance of having a reliable marking and registration system which would allow the identification and tracing of firearms.²¹⁵ The EU, for example, stressed the important role a legally binding international instrument would play in a global approach to the tracing problem.²¹⁶ The Swiss and French representatives mentioned, in this context, their initiative to establish an international tracing system on the basis of a treaty (UN, 2000; UN, 2001/6), while Canada and several other countries expressed their support for an effective international mechanism for marking and tracing.

However, before negotiations had begun, the US delegation articulated a series of 'red lines' which, it indicated, would prevent the US from joining consensus on a final Programme of Action.²¹⁷ These were:

213. This article complemented Article 35 of Section II: 'To develop international arrangements and a legally binding instrument to enable the timely and reliable tracing of lines of supply by relevant authorities.'

214. See, for example, the working paper submitted by China to the first PrepCom, A/CONF.192/PC/13, 18 July 2000, para. II.3.c, which recommends 'assuring the traceability of legally traded small arms and light weapons, e.g. appropriate marking and import and export record-keeping.'

215. Reference was also made to the *OSCE Document on Small Arms and Light Weapons* which contains a series of provisions on marking and record-keeping (OSCE, 2000, sec. II.B.1).

216. See EU statement by Belgian Foreign Affairs Minister Louis Michel: <http://www.un.org/depts/dda/CAB/smallarms/statements/euE.html>

217. Statement by John R. Bolton: <http://www.un.org/depts/dda/CAB/smallarms/statements/usE.html>

- No commitment to any legally binding agreement;²¹⁸
- No measures limiting the international trade in small arms to governments alone;²¹⁹
- No measures prohibiting the civilian possession of small arms;²²⁰
- No measures constraining the legal trade or manufacturing.

The US position, against those points that had found already a large consensus among delegations, found some support from Arab League countries and from Russia, both of whom opposed any consideration of the legal trade.²²¹

Meanwhile, NGO statements²²² reflected the points made in an IANSA press release, including the need for international conventions on marking and tracing, as well as brokering.²²³

Debates

The revised Draft Programme of Action distributed by President Reyes did not take into account the US delegation's red lines (UN, 2001/5), which led to strong opposition from the US delegation and difficult negotiations. After long discussion and the development of new proposals by the President in the form of six Conference papers (CRP1–CRP6) on the contentious issues, a series of compromises was finally reached to satisfy US demands and achieve consensus on a Programme of Action (UN, 2001/8).²²⁴ Specifically, the restriction of small arms sales to governments,²²⁵ mention of civilian law enforcement, controls on the legal trade, and the negotiation of legally binding instruments on marking and tracing, as well as brokering, were all abandoned. Nevertheless, there was agreement to conduct a UN feasibility study to explore the possibility of developing an international instrument for the identification and tracing of small arms and light weapons (Article IV.1.c). A draft resolution of the UN General Assembly confirmed this feasibility study during the First Committee of the 56th session (UN, 2001/10). The Group of governmental experts involved in this study will hold the first of its three working sessions in Spring 2002. The budget of the Group is estimated in a draft resolution of the First Committee (UN, 2001/11).

Programme of Action

The document consists of 4 sections:

- I. Preamble;
- II. Preventing, combating and eradicating the illicit trade in small arms and light weapons in all its aspects (*at the national, regional and global levels*);
- III Implementation, international cooperation and assistance;
- IV. Follow-up to the UN Conference.

The issue of marking and tracing occupies a prominent place in the final document presented to the 56th session of the UN General Assembly (UN, 2001/9). Article 7 of Section II calls for appropriate, reliable and unique marking allowing the identification of the country of manufacture, and is similar to the article on marking in the Vienna Firearms Protocol (UN, 2001/7, Art. 8.1.a). Such marks should also enable the country of origin to determine the manufacturer and serial number for purposes of identifying and tracing each weapon. All necessary measures are to be taken to prevent the transfer and possession of unmarked or inadequately marked small arms (Art. II.8). States commit themselves to keep 'comprehensive and accurate' records on manufacture, holding and transfer 'for as a long as possible' (Art. II.9)²²⁶ and to ensure

218. Reference is made to document L.4/rev.1, para.35 in Section II on traceability, and para.1.d) in Section IV restricting the production and trade to registered manufacturers and brokers (ONU, 2001/4).

219. Section II para.13 of L.4/Rev.1.

220. Paragraph 20 in Section II of L.4/Rev.1 to be eliminated and para.7 and 10 to address only the illicit activities.

221. The US delegation's red lines were criticized by US Senator Dianne Feinstein in a press release addressed to US President Bush on 16 July 2001: <http://feinstein.senate.gov>

222. NGOs attended the Conference on a no objection basis. For their statements, see Document DC/2792 of the Conference: <http://www.un.org/Depts/dda/CAB/smallarms/ngospeakers.htm>

223. IANSA press release, 'Governments must wake up to their responsibility,' 9 July 2001.

224. See also the statement by the President of the Conference on 21 July 2001: <http://www.un.org/Depts/dda/CAB/smallarms/statements/president.html>

225. The prohibition of small arms sales to non-state actors was eventually dropped from the final Programme of Action, despite the fact that it was supported by like-minded states and despite its considerable importance to African countries.

226. This provision is weakened by the fact that it does not stipulate that information be kept 'for life'.

effective measures for tracing (Art. II.10). Article II.17 calls on states to ensure adequate security, control, and management of stocks held by their armed and security forces. At the regional level, states agree to encourage negotiations aimed at concluding legally binding instruments designed to prevent, combat and eradicate the illicit small arms trade (Art. II.25). At the global level, states undertake to strengthen their ability to cooperate in identifying and tracing illicit small arms and light weapons (Art. II.36). Section III.6 calls upon states, along with international and regional organizations, to assist interested states in building capacity in marking, tracing and stockpile management. Sections III.10 and III.11 contain important commitments for international cooperation in marking and tracing. As stipulated in the OSCE document (OSCE, 2000), states are also encouraged to exchange information on their national marking systems (Art. III.12). Section III.14 calls upon states, along with international and regional organizations, to provide assistance for the destruction or 'other responsible disposal' of unmarked or inadequately marked small arms.

Finally, at the national level, states undertake to establish or designate as appropriate,²²⁷ national coordination agencies in order to oversee efforts to prevent, combat and eradicate the illicit trade over a wide range of areas—from manufacture to tracing and destruction (Art. II.4).

Section IV foresees a meeting of states on a biennial basis in order to follow up implementation of the Programme of Action. Conference participants also decided to convene a review conference no later than 2006.

6.6.3. Conclusion

Although the final Programme of Action is only politically binding and some important aspects of the small arms problem are omitted—including controls over private ownership, a prohibition on sales to non-state actors and the elaboration of legally binding instruments on brokering and marking and tracing—significant progress was made in

several key areas. For the first time, the problem was addressed at UN level on a multilateral basis and state-to-state transfers were considered, entering into the realm of disarmament and arms control.

The Programme of Action touches upon a wide range of questions relating to small arms and light weapons, even though participating states accepted few constraints, opting instead for numerous encouragements to take action. Security, health, humanitarian aspects, women, children, the elderly, violence, crime and terrorism are all addressed, while the right to self-defence, self-determination and state responsibility to deal with small arms issues are recognized. Relations between import export laws, norms and standards and international law are enhanced. Taken as a whole, the Programme takes into consideration more than the illicit trade narrowly defined, tackling some of its legal aspects as well. International cooperation between states, civil society and institutions is strongly emphasized, while some conflict prevention measures are also integrated into the final Programme.

The success of the Conference depends on the implementation of its Programme of Action. In this respect, the importance of follow-up is highlighted by all participants in the Conference. It would be useful and productive for all countries concerned to establish national coordination bodies and working groups composed of government and arms industry representatives, experts and NGOs, for the purpose of identifying national sources as well as the best course of action, both at the national level and vis-à-vis the UN. This should involve a careful study of the problems posed by the uncontrolled spread of small arms and the development of practical recommendations designed to curb their proliferation and control their transfer.

227. Several articles of the final document are weakened by the introduction of 'as appropriate'.

Conclusions

Curbing the spread of small arms and ammunition would be facilitated if the international community could agree that there is a need to limit and improve controls on overall trade in conventional arms. This means that internal and international settlement of disputes should be increasingly based on a 'culture of peace,' putting conflict prevention at the forefront rather than resorting to force as still happens too often today.

There are two main obstacles to limiting the trade in arms. Firstly, some industrial circles continue to have major financial interests involved in the production and export of arms. Secondly, states (especially industrialised ones), for fear of being isolated, are less inclined to unilaterally limit licit sales of small arms, which would require that stricter criteria be adopted. An international treaty defining internationally recognized standards on

the legal possession and transfer of arms would render states more willing to accept such limits and harmonize national laws. The challenge over the next few years will thus be to define these standards. Centralized marking and registration of information on small arms, which has been the focus of this study, would be a first step toward this goal. Increasing the transparency of arms flows and stocks requires political will, which is only in the process of being established through diplomatic, political and non-governmental efforts undertaken in the past few months, following the example of the antipersonnel landmine campaign.

Reducing the human cost of the spread of small arms will mostly depend on the establishment of a sense of responsibility among all those involved in the circulation of arms. It is urgent to view this matter separately from its classical commercial perspective by introducing the human dimension and developing regulations based on humanitarian law.

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APPENDIX 1.

<p>RESOLUTION NO. AGN/41/RES/11</p> <p>SUBJECT: CONTROL OF TRADE IN FIREARMS</p>	<p>To be classified as follows: 1 copy in the CHRONOLOGICAL SERIES: year 1972 1 copy in the SUBJECT SERIES</p> <p>Heading: Firearms, ammunition and explosives Sub-heading: Control of sale, purchase, carrying and possession of firearms, ammunition and explosives and smuggling thereof</p>
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TEXT OF RESOLUTION

NOTING continual increase in the number of offences committed using firearms,

TAKING ACCOUNT OF THE FACT that these offences, as well as the illegal possession and smuggling of firearms, very often have their origin in legal purchases of weapons abroad,

RECALLING the spirit and the letter of the resolution on the firearms trade adopted by the General Assembly at its 37th session (1968), in particular paragraphs 4 and 5,

CONSIDERING that the authorities in all countries should not only control and supervise the trade in firearms, ammunition and explosives on their own territories, but also be informed about weapons and ammunition legally acquired abroad by their nationals or residents,

The ICPO–INTERPOL GENERAL ASSEMBLY, meeting in Frankfurt from 19th to 26th September 1972 at its 41st session:

URGES affiliated countries to adopt all necessary regulations and administrative measures on their own national territories with a view to collecting such information and sending it to those countries whose nationals or residents are involved;

ASKS the Heads of National Central Bureaux to inform the Secretary General whether such information can be forwarded systematically to the countries concerned and, if so, to what extent.

APPENDIX 2.

RESOLUTION NO. AGN/61/RES/15	TO BE CLASSIFIED AS FOLLOWS:
SUBJECT:	1 copy in the CHRONOLOGICAL SERIES year 1992
Firearms Tracing	1 copy in the SUBJECT SERIES Heading: Firearms, Ammunition and Explosives Sub-heading: Miscellaneous

TEXT OF RESOLUTION

CONSCIOUS of the fact that the use of weapons, ammunition, and explosives is an integral part of most acts of terrorism and often other forms of violent criminal activity of an international nature,

AWARE of the significant reduction in border controls between various countries in the world,

ASSUMING that the easing of border controls will continue,

RECOGNIZING the fact that criminals are increasingly taking advantage of the easing of border controls,

RECOGNIZING that police work is often hampered by the inability of police services of a country to trace the history of firearms from their point of manufacture through the various subsequent sales and other transfers of the weapons,

HAVING BEEN INFORMED of the recommendations adopted by the Second International Symposium on Firearms and Explosives held in Lyons from 1st to 3rd September 1992,

RECALLING the Resolutions previously adopted by the General Assembly:

- AGN/37/RES/1, Tehran, 1968: Sale, Possession and Transport of Firearms

- AGN/41/RES/11, Frankfurt, 1972: Control of Trade in Firearms,

- AGN/55/RES/4, Belgrade, 1986: Terrorism and Trafficking in Weapons and Explosives,

- AGN/56/RES/7, Nice, 1987: Form to Transmit Information about Weapons and Explosives Discovered, Seized or Connected with Trafficking Cases;

The ICPO–INTERPOL General Assembly, meeting in Dakar from 4th to 10th November 1992 at its 61st session:

RECOMMENDS that Interpol Member Countries should more closely control the manufacture and sale of authorized weapons, ammunition and explosives so that the destination of these items can be more easily verified;

RECOMMENDS that each country in which firearms are manufactured establish a national firearms tracing office to enable police agencies to trace firearms from their point of manufacture to the purchase of the firearm from a retailer. Provisions should be made to require that the record of firearms businesses be sent to these national tracing offices whenever a firearms business ceases to operate for any reason;

ENCOURAGES all Interpol National Central Bureaux that until national tracing offices are established in their country they should contact the General Secretariat for assistance in determining the point of manufacture of particular firearms. In this way message traffic pertaining to firearms traces can be directed to the proper National Central Bureau thereby avoiding wasted time as a result of misdirected messages;

INFORMS the National Central Bureaux that the General Secretariat maintains information on firearms manufacturers as part of the Interpol Trafficking in Arms (ITAR) computer system

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