

AKM-pattern assault rifles seized by Indian troops from rebel forces in Gurez, India, May 2006.
© Tauseef Mustafa/AFP/Getty Images



Arsenals Adrift

ARMS AND AMMUNITION DIVERSION

INTRODUCTION

Diversion lies at the heart of illicit arms proliferation. In northern Kenya, 40 per cent of ammunition on the illicit market has leaked from Kenyan armed forces. Across the world, theft from civilian owners may result in the unlawful acquisition of as many as 1 in every 1,000 weapons. These are examples of diversion: the unauthorized transfer of arms and ammunition from the stocks of lawful users to the illicit market.

Across the world, the diversion of arms and ammunition sustains the activities of non-state armed groups, terrorist organizations, and armed criminals. It includes, but is not limited to: large, international transfers organized by corrupt military officials; low-level, localized theft and resale by military and police forces; and the loss of civilian weaponry through home burglary and other forms of theft.

Diversion can present a serious threat to the safety of civilian populations and even to the security of the state itself. In some countries it threatens the state's monopoly on the use of force by allowing armed groups that are denied other sources of weaponry to challenge state authorities. For these reasons, diversion has the potential to thoroughly undermine any measures taken to strengthen domestic and international regulations governing the arms trade—making it an increasingly important field of both national and international concern. Among this chapter's principal observations are:

- Diversion is largely a self-inflicted problem that stems from negligence by states, militaries, and civilians.
- Weapons that are diverted from state stockpiles or from civilian hands can fuel crime as easily as they can fuel insurgency or international terrorism.
- Diversion can often be addressed by relatively low-cost improvements to accounting, monitoring, and the physical security of arms and ammunition.
- Measures to curtail diversion must be comprehensive, addressing both security force stocks and civilian holdings.

The chapter addresses diversion in two parts: the unauthorized acquisition of arms and ammunition held by state security forces, and the acquisition of legally held civilian stocks by criminals. It emphasizes that diversion operates at many different levels. Tackling the problem therefore requires comprehensive controls over all arms and ammunition—regardless of where they are stored or used.

DIVERSION IN CONTEXT

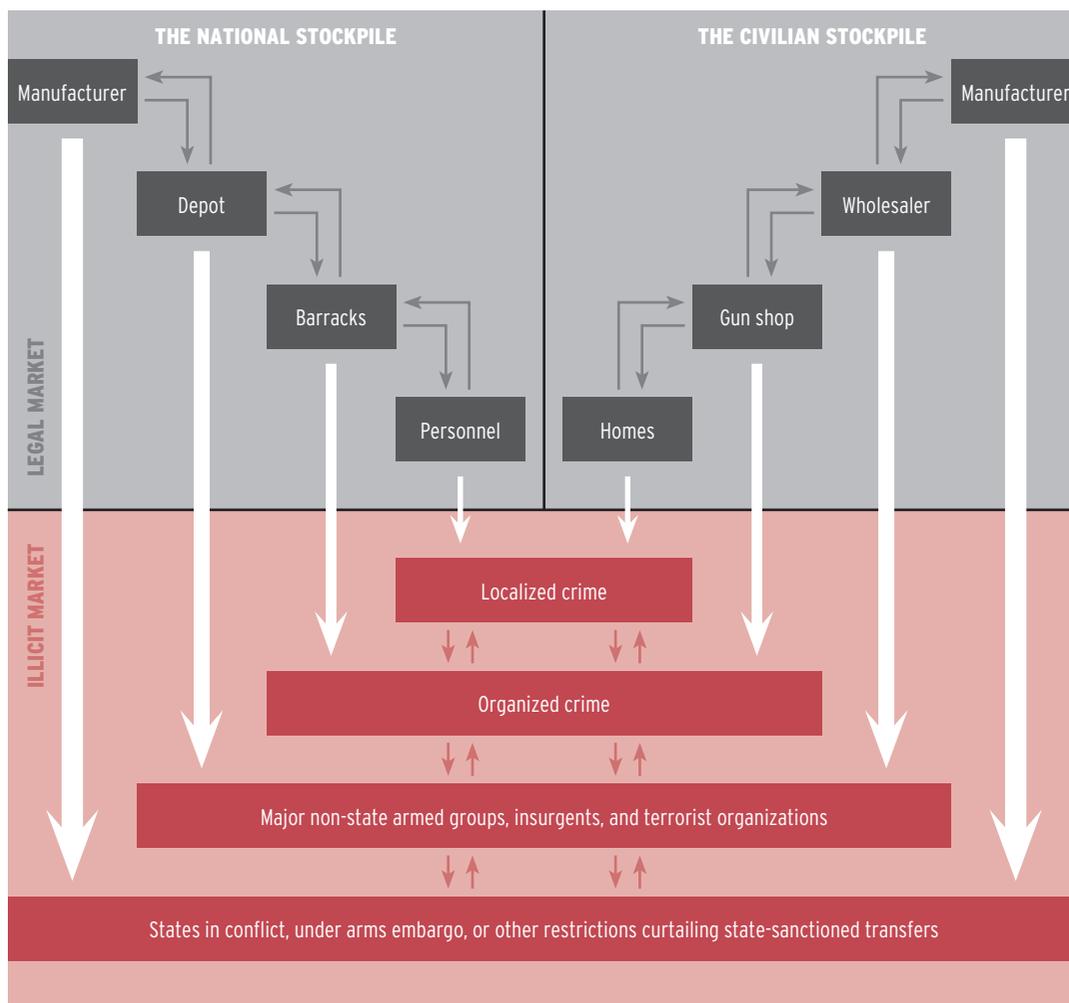
Stockpile diversion can occur from any legally held quantity of small arms and ammunition, whether in military or in civilian hands. Before analyzing diversion, however, it is useful to sketch a number of 'baseline' features of stockpiles.

Stockpiles

'Stockpile' (or simply 'stocks') refers to any collection of arms and ammunition, of any scale, and under the possession of any actor. The term, as used in this chapter, should therefore not be confused with the stereotypical, mass storage depots that militaries use to house munitions, although the term does encompass these facilities. This chapter deals with two, analytically distinct, stockpiles: the state-owned or 'national stockpile' and civilian stocks—the 'civilian stockpile' (see Figure 2.1).

The *national stockpile* encompasses every item of arms or ammunition under the control of—or destined for—a state's defence and law and order apparatus. Its components range from munitions stored in manufacturing facilities to large arms and ammunition depots and the weapons and ammunition issued to individual soldiers and police officers. It also includes the weapons and ammunition of paramilitary personnel that are nominally under state control. Diversion can, and does, occur anywhere in the national stockpile.

Figure 2.1 **Avenues of diversion from national and civilian stockpiles**



The *civilian stockpile* includes all arms and ammunition that are in the hands of—or destined for—authorized civilian users. Its components include weapons located in manufacturing facilities (which may be the same as those that supply the security forces); arms and ammunition stored by wholesale firms, which supply smaller businesses in the arms trade; weapons and ammunition held in gun shops and sports shooting associations; and those that are stored by private users at home (civilian holdings). Again, stocks anywhere in the civilian stockpile can be subject to diversion.

Arms and ammunition flows

Weapons and ammunition are not static and do not usually reside permanently in any one place. In the state-owned national stockpile, they flow throughout the security apparatus in response to patterns of deployment, changing demand, and the need to 'return' items for repair or alteration. Similar dynamics apply in the civilian market, as weapons and ammunition are sold, resold, or, in the case of ammunition, consumed.

Both in the national stockpile and among civilian stocks, ammunition is notably 'mobile' because it is a rapidly consumable good and needs to be regularly replenished when used—whether expended during training or combat or for recreational purposes. In the case of national stockpiles, for example, a single round of ammunition may be stored under tight security in a military depot. However, if it is transferred to a barracks or a police station with ineffective physical security measures, the ammunition risks being lost or stolen and thereby diverted to the illicit market. The same is also true of weapons that are transferred from one locale to another or from one set of users to others.

Ammunition is a rapidly consumable good.

This flow effect, which is present in both national stockpiles and civilian holdings, means that efforts to prevent diversion at any one point in the supply chain can be undermined by weaknesses at other points. Effective physical security needs to apply to arms and ammunition everywhere and not just to certain parts of either stockpile.

A multiplicity of sources

The diversion of arms and ammunition can have serious consequences regardless of whether it originates from the state-owned national stockpile or from civilian stocks. Diversion from either source—whether military or civilian—can provide illicit users with compatible weapons and ammunition because there are relatively few common small arms calibres, and frequently these are used by both militaries and civilians.

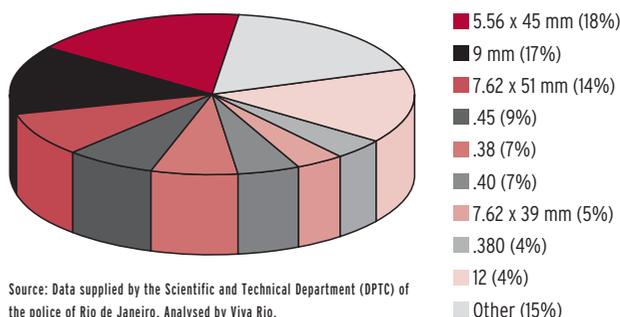
For example, a military assault rifle can fire civilian-marketed ammunition and vice versa. Common military calibres, such as the 5.56 x 45 mm SS109 rifle and 9 mm Parabellum pistol rounds, are widely used by civilian shooters in many Western countries (in the case of 5.56 x 45 mm, the civilian equivalent is the .223 Remington).¹ It is often relatively easy for illicit users to find appropriate calibres to suit diverted small arms or, conversely, the small arms to fire diverted ammunition.

Clear evidence of the impact of calibre compatibility comes from seizures of ammunition by the Police of Rio de Janeiro (see Figure 2.2). Not only do there appear to be relatively few calibres in use on the illicit market, but these calibres have both military and civilian applications. While all are 'restricted use' and therefore subject to some control (Bevan and Dreyfus, 2007, pp. 303–04), they are nevertheless used by a wide range of actors including sporting shooters, hunters, collectors, and various branches of the Brazilian state security forces (Presidência da República, 2000, arts. 16, 17, chs. VIII and IX of Title V; 2004, art. 19).

In some countries there are even fewer calibres in service among both military and civilian users than in the case of Brazil. For example, most civilian users in East Africa are equipped with military assault rifle ammunition (such

as the 7.62 x 51mm and 7.62 x 39 mm calibres in Figure 2.2). They rarely use pistols, and hence pistol calibres (9 mm, .38, etc.), which means that there is very little difference between the arms and ammunition used by civilians and the military.² In these cases, minimal calibre diversity makes it easier for illicit users to obtain the required types of ammunition as a result of diversion from either civilian or military sources.

Figure 2.2 Ammunition calibres seized by police from criminal factions, Rio de Janeiro 2003-06 (n = 2860)



Paths of diversion

The diversion of arms and ammunition takes many forms and ranges from thefts that involve high-level decision-maker complicity to low-level pilfering by petty criminals. Its contributing factors are various, and extend from private motivations, such as the need for hard cash by underpaid security personnel, to major political changes that affect the entire structures of states and their capacity to secure national stockpiles.

Table 2.1 Categories of diversion and regulatory frameworks

Stockpile	Type of diversion	Dynamic	Description	Reach	Regulatory framework
National stockpile	Low-order	Intra-security force theft	Theft by members of the armed forces	Localized	Stockpile management
		Extra-security force theft	Theft through unauthorized access to stocks or attack	Regional to international	Stockpile management / security sector reform
	High-order	High-level corruption	Defence sector officials orchestrate diversion	International	Institutional capacity building / combating corruption / security sector reform
		Mass looting or dispersal	State or security sector collapse leading to the dissolution of stockpiles	Regional to international	Political (domestic governments prior to collapse, possibly occupying powers)
Civilian stockpile	Low-order	Theft from users	Theft from persons, homes, and vehicles	Localized	National firearms laws (ownership, carrying, and storage)
		Unauthorized sales	Sale to unauthorized users	Localized	National firearms laws (commerce and resale)
	High-order	Theft from gun shops, wholesalers, and factories	Targeted thefts by organized crime and other organized non-state groups	Regional to international	National firearms laws (commerce and security thereof)

Faced with such divergent conditions, the following sections present a typology of diversion, its contributing factors, and measures that can be applied to limit its occurrence (see Table 2.1). They address diversion from civilian and security force (national) stocks separately—in recognition of the often different illicit markets each can feed and the differing sets of responses that are required.

In each case the sections make a simple dichotomy by assigning high and low orders to diversion. These orders recognize a number of factors including: differing scales of diversion (quantities diverted); the ‘reach’ of diverted munitions (whether transferred locally or internationally); and the impact of diversion (for example, enabling small-scale armed crime or larger-scale organized crime or armed insurrection) (see Table 2.1).

DIVERSION FROM THE NATIONAL STOCKPILE

The diversion of state-owned arms is not a new phenomenon. As early as the third century BC, weapons looted from Roman armouries and transferred via illicit arms deals were used to arm Germanic war bands (Penrose, 2005, p. 210). The national stockpile has always been a source of weapons for non-state armed groups with few other sources of weaponry. Moreman (2006), for instance, notes the pivotal role that diversion by members of the armed forces played in supplying groups along the Northwest Frontier Province of India in the late 19th and early 20th centuries. In recent times, cases ranging from the Tuareg Rebellion in Mali (Florquin and Pézard, 2005, p. 51) to the streets of Rio de Janeiro (Bevan and Dreyfus, 2007, pp. 301–11) demonstrate that diversion is still a major problem leading to the loss of state stocks and the acquisition of arms and ammunition by armed groups and civilians.

The diversion of state-owned arms is not a new phenomenon.

Low-order national stockpile diversion

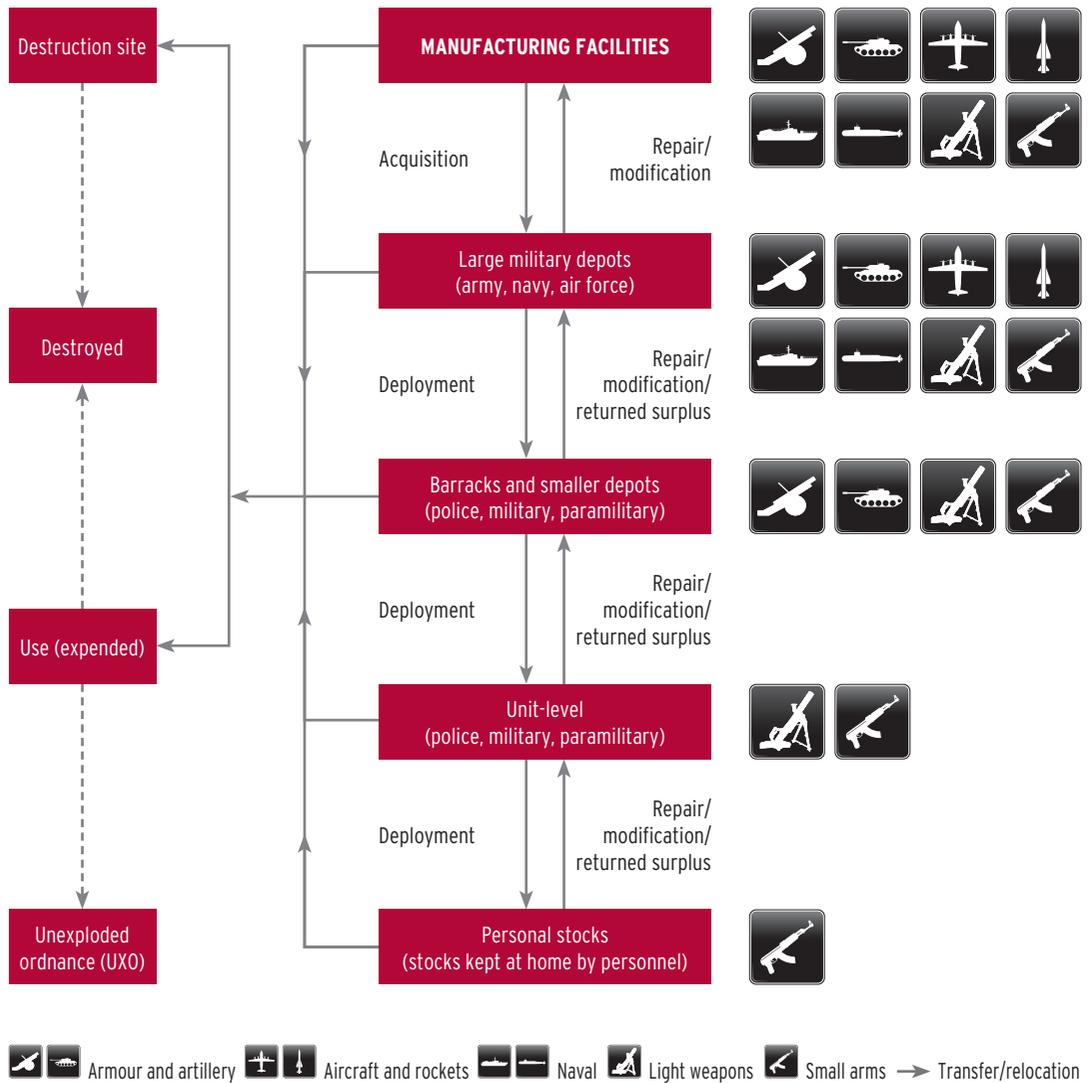
Low-order diversion of the national stockpile is the theft of relatively minor quantities of weapons and ammunition by individuals and small groups of people. It may occur at all levels of the national stockpile, but is generally characterized by its links to localized illicit trade rather than regional or international transfers. The problem is largely a result of microeconomic demand factors combined with poor stockpile management. It is often facilitated by the concealability and portability of small arms.³ In addition, two factors make small arms, light weapons, and their ammunition particularly susceptible to low-order diversion.

First is their wide distribution throughout security force stockpiles (see Figure 2.3). While larger conventional arms, such as artillery and missile systems, are rarely deployed to smaller units of a country’s security forces, small arms and light weapons feature in all levels of the national stockpile. This wide distribution results in a greater number of potential opportunities for diversion, ranging from the manufacturing facility to military depots, barracks, and deployed personnel.

Second, the fact that small arms and light weapons tend to be distributed at ‘lower’ levels than larger weapons can lead to diminishing security measures and an increased risk of diversion. When command and control is weak, oversight over arms and ammunition is likely to be progressively weaker when weapons are dispersed throughout progressively smaller units of the security forces.

Weak oversight and poor physical security measures facilitate several forms of diversion, including theft by both personnel (intra-security force diversion) and ‘external’ actors (extra-security force diversion).

Figure 2.3 The distribution of conventional arms and ammunition within the national stockpile



Intra-security force diversion

Lower-order, intra-security force theft involves the diversion of arms and ammunition by military, police, or paramilitary personnel, and can take two forms—theft from arms and ammunition storage facilities, and illicit transfers from the individual stocks of security force members.

Theft from storage sites

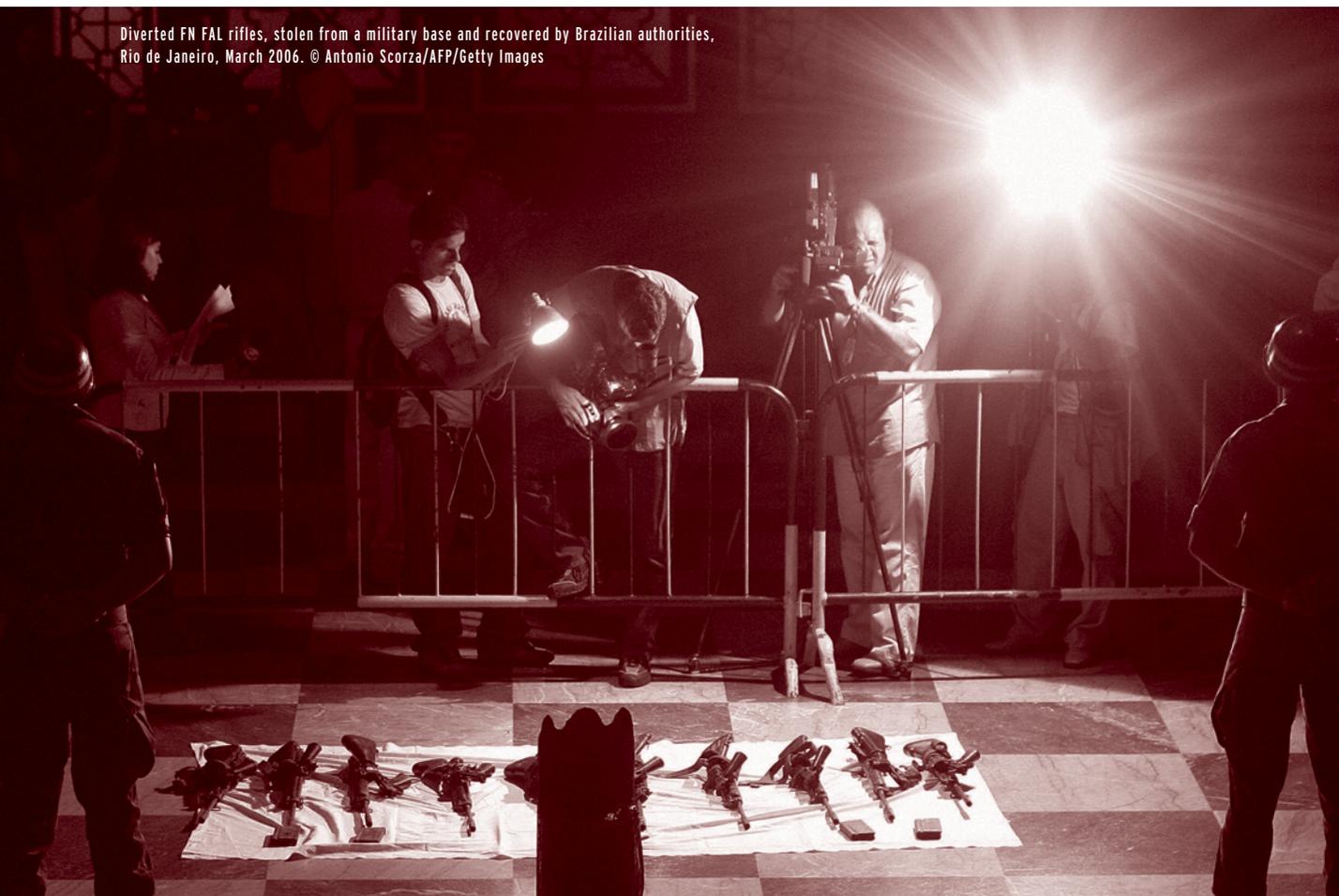
Diversion is often orchestrated by the stockpile security personnel who are themselves charged with monitoring and securing stocks from theft. Small facilities, such as police stations and military barracks, may be particularly susceptible if few personnel are responsible for record-keeping and the physical inventorying of stocks. Illustrative in this regard is the case of Papua New Guinea, where the diversion of arms and ammunition from the Royal Papua New

Guinea Constabulary (RPNGC) has been particularly prominent. A 2004 audit estimated that around 30 per cent of the RPNGC's stocks of small arms had been sold onto the illicit market. The problem prompted authorities to issue weapon safes to the smaller police stations—many of which, like the weapons they were designed to protect, were subsequently stolen (Alpers, 2005, pp. 49–50).

At larger storage facilities the problem of diversion may be similarly problematic and, from a public security perspective, perhaps more so, given that these facilities are likely to stock explosive light weapons. In Sydney, Australia, for instance, military personnel, including a munitions technical officer, stole an estimated eight M-72 LAW rocket launchers from military stockpiles between 2002 and 2007. These light weapons were sold to one or a number of Sydney's criminal networks (AAP, 2007; Braithwaite et al., 2007). Light weapons such as these can pose both an elevated risk of diversion (if that kind of explosive firepower is in high demand by certain users) and, as a result, an elevated risk once they have been diverted (Box 2.1).

In virtually all cases where individuals, or small groups of military personnel, appear to have been able to divert arms and ammunition, their actions have been facilitated by two factors. First, they frequently perform duties that give them regular access to stocks and to stock accounting systems. Russian military supply officers in Chechnya, for instance, have been implicated in 'writing-off' weapons as destroyed and then selling them (JIG, 2005). Second, in some cases, such as Papua New Guinea, personnel have access to stocks that are poorly inventoried. Both of these factors are made critical because the personnel concerned are poorly monitored by peers or superiors—facilitating both theft and account-tampering.

Diverted FN FAL rifles, stolen from a military base and recovered by Brazilian authorities, Rio de Janeiro, March 2006. © Antonio Scorza/AFP/Getty Images



Box 2.1 Prioritizing the security of certain types of ammunition

Different varieties of ammunition and their component parts present different security risks if lost or stolen from stockpiles. These risks are proportional to: 1) the operational (i.e. tactical and destructive) potential of the ammunition in question; and 2) the ease and speed with which persons illicitly acquiring the ammunition can make it operational and use it. While it is clear that all arms and ammunition pose risks to security when in the wrong hands, certain states have attempted to prioritize risks for different types and allocate specific security measures accordingly.

For these reasons, the United States Department of Defense (USDoD, 1989, p. 30) classifies conventional ammunition according to 'the degree of protection needed against loss or theft by terrorists or other criminal elements'. As a result the DOD ranks ammunition higher in sensitivity (see Table 2.2) when it is explosive, can threaten high value military assets, and can be deployed quickly.

For example, Code 1 munitions include man-portable air defence systems (MANPADS) and anti-tank guided weapons (ATGW) that are either stored or transported as a complete system (missile and launcher) or sufficiently proximate to one another to enable quick assembly into a functioning weapon system. Code 2 ammunition includes explosive munitions that are either ready to use (such as grenades and mines); or could be improvised for other purposes (such as raw explosives and missiles). All of these weapons could either be used quickly and with great effect or used in weapons that already circulate on the illicit market.

This accounting system is designed to ensure that weapons listed under Code 1 are subject to enhanced security at all times. Measures include specific regulations on physical security, such as guard levels at storage facilities, modes of perimeter security, and communications equipment to alert authorities of a loss or theft of weapons (USDoD, 2000, pp. 24-25).

It is worth noting that the Department of Defense ranks small arms ammunition as Code 4 (low sensitivity), despite the often ready availability of arms capable of firing military calibres. Given the potential destabilizing impact of leakages of most types of ammunition, it is probably safe to conclude that security measures should be as comprehensive as possible for all categories. While the codes listed in Table 2.1 prioritize protective measures to prevent loss or theft, they do not entail different accounting standards. The United States stockpile management and security system dictates comprehensive accounting of *all* stocks—regardless of assigned codes.

Table 2.2 United States military ammunition and explosives security risk codes

Code	Designation	Category of ammunition included
1	Highest sensitivity	Ready-to fire (ammunition and weapon) missiles, including Hamlet, Redeye, Stinger, Dragon, LAW, and Viper. This category includes non-nuclear missiles and rockets in a <i>ready-to-fire</i> configuration. It also applies when the launcher (tube) and the associated explosive rounds, though not in a ready-to-fire configuration, are stored or transported together.
2	High sensitivity	The following items are included: (a) Grenades, both high explosive and white phosphorous. (b) Antitank and antipersonnel mines with an unpacked weight of 100 lbs or less each. (c) Explosives used in demolition operations, such as C-4, military dynamite, TNT, and the like. (d) Explosive rounds for missiles and rockets other than Category I that have an unpacked weight of 100 lbs or less each.
3	Moderate sensitivity	(a) Ammunition, .50 calibre and larger, with explosive-filled projectile and having an unpacked weight of 100 lbs or less each. (b) Incendiary grenades and grenade fuses. (c) Blasting caps. (d) Detonating cord. (e) Supplementary charges. (f) Bulk explosives.
4	Low sensitivity	(a) Ammunition with non-explosive projectiles and having an unpacked weight of 100 lbs or less each. (b) Fuses, except those in Category III. (c) Grenades, illumination, smoke and practice, and CS/CN (tear producing). (d) Incendiary destroyers. (e) Riot control agents in packages of 100 lbs or less.

All of these risk factors can be attenuated by effective, rule-based stockpile management procedures. As a result of the theft of M-72 LAWs, for instance, the Australian defence forces have enforced a strict ‘two-person policy’ whereby personnel are prohibited unsupervised access to weapons and explosives stores (Blenkin, 2007). Other countries already have such measures in place. In the United States, personnel tasked with storage functions are not allowed access to records. Similarly, record-keeping personnel are prohibited from conducting physical inventories without the supervision of storage personnel (USDOD, 2002, p. 8). These ‘check and balance’ procedures also ensure that law-abiding personnel are better protected from blame should a loss or theft occur.

Diversion of individual stocks

A second type of intra-force theft occurs when members of a state’s armed forces or other state agents divert *issued* stocks of arms and ammunition to the illicit market.

Issued weapons are those that are required by personnel to perform their duties. They rarely include light weapons, and, in most countries, consist of small calibre weapons and ammunition, such as pistols and assault rifles,

which comprise the individual weapons of police, military, paramilitary, and other government agents. While many states issue arms and ammunition only in time of need, others allow individual weapons (and their ammunition) to remain in the hands of security force personnel, whether on or off duty.

Because these issued stocks are already in the charge of personnel, and access to them is not subject to entry to an armoury or other weapons storage facility, they can pose a particular risk of diversion—particularly in the case of ammunition. In northern Kenya, for instance, 7.62 x 39 mm assault rifle ammunition circulates widely among Turkana pastoral communities and can be attributed to diversion from Kenyan security forces, most notably the Kenya Police Reserves (KPR), which has a track record of ‘losing’ arms and ammunition.⁴ In northern Uganda the situation is similar, with paramilitary Local Defence Units (LDU) as well as members of the Uganda People’s Defence Forces (UPDF) implicated in diversion (Bevan and Dreyfus, 2007, pp. 288–301).

Reasons for low-order diversion

Low-order diversion, whether directly from weapons storage facilities or from the issued stocks of security force personnel, is generally a response to localized illicit demand.

A common feature of low-order diversion is that the security force personnel make very local contacts with



Ammunition on the loose: 7.62 x 39 mm ‘AK’ ammunition photographed in the hands of non-state groups in northern Kenya, January 2008. © James Bevan

Box 2.2 The particular case of ammunition diversion

Unlike a soldier's weapon, such as an assault rifle or pistol, the disappearance of ammunition is often unnoticed or can easily be explained to superiors. Where security forces do not have to account for the ammunition they expend in engagements or training, when commanding officers cannot oversee the use of weapons, and where no records are kept of the numbers of rounds issued: ammunition is easily diverted. In many countries the scale of diversion remains unclear for precisely these reasons.⁶

Although the impact of such small-scale diversion may seem relatively slight when viewed from the perspective of individual transactions—major legal ammunition shipments often run into millions of rounds—on aggregate low-level diversion can assume very large proportions. In Rio de Janeiro a stockpile manager was convicted in 2005 for diverting around 10,000 rounds to drug-trafficking organizations (Bevan and Dreyfus, 2007, p. 310). Similarly, in March 2007 four army personnel, including one warehouse guard, were arrested in Albania for diverting around 100,000 rounds of ammunition (JIG, 2007a). In Peru, in 2006 and 2007 alone 80,000 assault rifle rounds were recovered after having been diverted in a number of instances from police and military stocks. The ammunition was believed to be destined for the Colombian Fuerzas Armadas Revolucionarias de Colombia (FARC) (JIG, 2007c).

Even the smallest of trades, of perhaps three or four rounds, can reach large proportions when sufficient numbers of personnel are involved for long periods of time. In northern Kenya, for instance, research by the Small Arms Survey suggests that around 40 per cent of 7.62 x 39 mm ammunition circulating illicitly in the region can be attributed to diversion from Kenyan security forces. In this case individual instances of diversion are small in volume, but when combined they have a strong impact on the propensity for armed violence.⁷

the illicit market. Such transfers can be relatively large in scale. For example, in 2002 four Israeli soldiers were charged with the theft of around 60,000 5.56 x 45 mm assault rifle rounds, destined for Palestinian factions in the Hebron region (BBC, 2002; Greenberg, 2002). But more often than not they are small transfers.

These may take the form of interaction with criminal gangs in cities and towns, as in the Australian M-72 case (Braithwaite et al., 2007). In the Israeli case it appears to have involved Israeli Arabs with social ties to Palestinian factions, and included other illicit activity including the smuggling of non-military goods (Greenburg, 2002). In Kenya and Uganda diversion by paramilitary personnel often occurs between members of the same clan or sub-clan (Bevan and Dreyfus, 2007, p. 299).

For the most part, the motive behind these locally connected thefts is personal economic gain. The value of such transactions may run into many hundreds of thousands of dollars or it may be confined to very small trades. In northern Kenya, for instance, a round of 7.62 x 39 mm ammunition sells for around 200 Kenyan shillings (around USD 3 or the price of a beer).⁵

The attractiveness of such small trades cannot be overestimated. In many developing countries security force personnel receive extremely low or intermittent pay. Small arms, and ammunition in particular (Box 2.2), can provide a ready currency with which to purchase items required for daily subsistence, such as foodstuffs or perhaps a pair of boots or a new shirt.

Policy implications

Accounting and oversight are two fundamental pillars of arms and ammunition management that can be employed to address low-order diversion. Effective accounting covers three basic processes:

1. **Stocks issued:** The numbers and types of arms and ammunition issued to security forces (at all levels) are recorded and this information is stored securely at progressively higher administrative levels.
2. **Stocks expended:** The numbers and types of arms and ammunition expended or rendered unfit for use (whether in training or combat) are documented and the circumstances of such expenditure specified.

3. Stocks audited: All stocks are thoroughly audited and the balance checked against reports detailing issuance and expenditure.⁸

These three procedures are contingent on functioning command and control within security force administrations.⁹ Where there is little oversight, it is unlikely that such measures will operate effectively.

If internal monitoring of personnel is weak, however, external monitoring can be employed to detect instances of diversion and trace thefts back to the security forces responsible—particularly with respect to ammunition. Lot-marking is one such measure, whereby ammunition is assigned a code that specifies the particular unit within a state's security apparatus to which it has been issued. Lot-marking can be an effective way to highlight instances of diversion and remedy theft within security forces, in addition to deterring theft in the first place. Few countries, however, directly lot-mark small arms ammunition. Austria, Brazil, Colombia, France, and Germany are exceptions whereby national regulations require that all or certain security forces use only lot-marked ammunition (Anders, 2006, p. 212; Bevan and Dreyfus, 2008).

Extra-security force diversion

Low-order, extra-security force theft involves diversion from national stockpiles by non-state actors. These unlawful users may target weapons storage facilities or the personal stocks of members of the security forces. In either case their access to arms and ammunition is often contingent on lax stockpile management practices—including stockpiles that are made vulnerable to violent attack by minimal investments in security and a lack of planning on the part of relevant authorities.

Many weapons storage facilities are unguarded.

Diversion via unauthorized entry

Stockpile facilities that are extremely poorly guarded allow the entry of unauthorized personnel and the theft of arms and ammunition. Direct, unaided entry by non-state actors is probably rare for larger stocks of weapons, such as those held in barracks and larger security force facilities, because intruders have to confront relatively large numbers of state agents before gaining access to arms and ammunition. However, cases such as the theft in 1999 by local teenagers of man-portable air defence systems (MANPADS) from a state factory in Poland suggest that large facilities can be prone to the most basic incursions (Golik, 1999; PNB, 2000).

For the most part, however, smaller stockpiles appear to be the most vulnerable to non-violent thefts by unauthorized personnel. For example, Capie (2003, pp. 97–109) noted the ease with which national stockpiles in a number of Pacific states could be accessed by outsiders. Among the risks he identified were: hundreds of assault rifles secured only by single doors with single padlocks, and, in the worst cases, weapons stored on floors, or simply leaning against walls, in unlocked, unguarded rooms.

The Pacific states were, and are, not unique. Numerous reports from South-east Asia suggest that many weapons and ammunition storage facilities are left unguarded and in an almost comical state of repair—one, for instance, was described as having a locked door, a roof, but only three walls.¹⁰ Certain parts of Africa display similar problems. One US State Department Official recalled a 2003 case in Monrovia, Liberia, in which a monitoring team found four MANPADS inside a shed 'guarded only by a chicken with no tail feathers'.¹¹

Storage conditions such as these require little concerted effort on the part of thieves. Diversion can be a relatively passive process whereby local people simply walk into the stockpile and help themselves to arms and ammunition. Although such pilferage may be localized, the easy availability of high-value weapons such as MANPADS, which are

in great demand by some non-state groups, suggests the potential for these local dynamics to link with the international trade in illicit weaponry.

Diversion by force

The above cases are illustrative of situations in which security has been sufficiently lax to enable the unchallenged entry of unauthorized personnel into storage facilities, but there are also cases where non-state actors gain access to arms and ammunition by force.

State forces often inadvertently provide large quantities of arms and ammunition to opposing non-state armed groups. Diversion via capture from state security forces—whether on the field of battle or through direct assault on

military facilities—is a major source of illicit arms and ammunition. As Florquin and Berman (2005) note, in seven out of nine West African countries where armed groups have operated in recent years, the groups in question have acquired arms and ammunition through one or both of these means.¹²

Captured weapons are often pivotal in allowing insurgencies to gain momentum through a process described by Bevan (2005, pp. 186–87) as the ‘acquisition spiral’. One example of this phenomenon described by Humphreys and Mohammed (2003, p. 247) was the rapidly strengthening position of the Malian Mouvement Populaire de Libération de l’Azawad, as it used successively larger quantities of captured weapons and ammunition to launch attacks on military facilities—thereby obtaining yet greater amounts of arms and ammunition.

State stockpiles are tempting targets for many groups—whether criminally or politically motivated—that wish to augment their fire-power. The long-term impact of such attacks can be devastating when large numbers of weapons and ammunition are released onto the illicit market. In 1979, for instance, the Matheniko Karimojong sub-clan of northern Uganda overran a Ugandan Army barracks in Moroto, resulting in the capture of an estimated 60,000 assault rifles and extensive stocks of ammunition (Mkutu, 2007a, p. 36). Many of the rifles and ammunition of that period still circulate in the region and help sustain armed violence that claims many hundreds of lives annually.¹³

The impact of such attacks can be particularly pronounced when this form of diversion comprises the only source of arms for non-

state actors. The Solomon Islands provide a fairly unique, self-contained case. Almost all of the factory-manufactured weapons and ammunition that proved pivotal in intensifying the 1998–2003 conflict were captured from stocks of the Royal Solomon Island Police (RSIP) and there were few such weapons in civilian hands at the outbreak of the conflict (Muggah and Bevan, 2004, p. 8).



An East Timorese police officer with military-issue AUG assault rifles looted by civilians during violence in May 2006. Balibar-Aileu district, East Timor, June 2006. © Candido Alves/AFP/Getty Images

The capture of arms and ammunition often continues throughout conflicts and enables otherwise poorly equipped non-state armed groups to sustain military offensives. In East Timor, for instance, the rebel faction led by Alfredo Reinado has consistently targeted security forces as a source of arms and ammunition. In February 2007 the group attacked police stations along the East Timor–Indonesian border, resulting in the capture of around 17 assault rifles (BBC, 2007).

Even troops that are stationed to prevent or end hostilities can help sustain them when their weapons are forcibly diverted. In September 2007, for instance, the African Union Mission in Sudan (AMIS) base at Haskanita in southern Darfur was overrun by rebels, resulting in the loss of weapons and ammunition (JIG, 2007b).

Not all diversion by force is large in scale. United Nations security reports from northern Uganda, for instance, indicate numerous instances in which soldiers have been waylaid by groups of criminals, resulting in the theft of arms and ammunition.¹⁴ Similarly, in 2003 an attack in Venezuela blamed on ‘common criminals’ resulted in the deaths of four National Guard soldiers and the theft of their weapons (Olson, 2003). Soldiers, operating alone or in small units, can be an attractive target specifically because they carry weapons and ammunition.

Policy implications

Diversion by unauthorized access to national stockpiles is preventable through the application of basic physical security components of stockpile management.

Physical security refers to the protection of ammunition, weapons, and explosives against any malevolent actions, including theft, sabotage, damage, or tampering. The most effective means to ensure security is by restricting access by unauthorized personnel and installing measures to *detect, slow, and counteract* intrusion. Multiple fences and locked doors slow intruders, regular patrolling detects incursion, and police or troops stationed within easy reach of a facility can intervene to counter unauthorized access.

Additions such as electronic surveillance systems, perimeter lighting, and electrical alarms make facilities safer; but in many states the most basic, low-cost stockpile security procedures could be applied with minimal expenditure¹⁵ and sufficient political will. The first step in this process is to draft a plan detailing security measures, their requirements, and actions to take in the event of malfeasance (Annexe 2.1).

While these measures can detect, slow, and counteract unauthorized entry, it is important to note that monitoring and accounting procedures must also be in place to dissuade stockpile management personnel from facilitating unauthorized access to facilities. Physical security is only as reliable as the personnel charged with keeping it, which again underlines the need for effective oversight and accountability. In 2004, for example, the chief armourer of a Moldovan military brigade’s storage facility was sentenced to three years in prison for allowing unauthorized access to military facilities. Although the armourer did not personally take possession of the munitions, his actions enabled the theft of 200 grenades, 31 grenade-launchers, and more than 90,000 rounds of ammunition (SEESAC, 2006, pp. 101–02).

However, it is not just the facilities themselves that account for unauthorized entry and theft. Very often diversion results from negligence on the part of state agents working in otherwise secure environments. Diversions of this kind include the theft of unsecured weapons from the homes or vehicles of security force personnel,¹⁶ or the theft of weapons and ammunition that have been left unattended on desks in security force facilities.¹⁷

Safe storage is critical in the case of theft from homes and vehicles. Even in the most organized of security forces, procedures related to securing deployed weapons may be inadequate. In 2005, for instance—in an event that was far from isolated—a service weapon was stolen from the car of a Washington Police Chief (AP, 2005). Although

Basic security procedures could be applied with minimal expenditure.

members of the US police readily admit that stolen police weapons are usually used in other crimes (Klein and Dvorak, 2006), the official in this case, having left his weapon in a locked car, broke no rules (AP, 2005).

The problem may be more pronounced elsewhere. Many security force personnel in developing countries do not have the physical security measures to protect their own homes, let alone their weapons and ammunition. Military and police forces in East Africa, for instance, are often deployed to villages where an earth or wicker wall is all that protects valuables—including weapons—from theft. Short of carrying an assault rifle into a local bar at night, often the only option for off-duty service men and women is to leave the weapon in the care of a friend or relative.¹⁸

The logical solution, in these cases, would be to enforce a strict policy that weapons cannot leave military or police facilities if they cannot be secured. Given that many such facilities, however, remain less secure than people's homes, this will not always be appropriate.

In the case of violent attack resulting in diversion it may be difficult for security forces to guard against such assaults. This is particularly the case in attacks against individual personnel. However, the same basic tenets of physical security that apply within stockpile facilities—detect, slow, and counteract—also apply to how they are situated and protected in a broader sense. These include: 1) adequate garrisons of well-equipped forces to slow potential attacks and lessen the likelihood that they will result in diversion; 2) communications channels to warn against potential attack or seek assistance in the event of assault; and 3) the proximity of forces that are able to repel attacks should they occur.

Very often the susceptibility of stocks to attack is commensurate with the insecurity facing members of the security forces in many countries, who are often deployed far from central control—sometimes in dangerous border regions—with little support from other state forces. As with many factors associated with diversion, vulnerability in these cases often stems from weaknesses in broader security sector management.

High-order national stockpile diversion

High-order stockpile diversion involves the theft of large volumes of arms and ammunition, sometimes running into many hundreds of tonnes of weaponry. Like low-order diversion it is often facilitated by poor stockpile management practices, but in many cases it results from factors that are much broader than the management of arms and ammunition per se.

Weak state structures, a lack of accountability within political and military administrations, and associated loopholes in transfer regulations, conspire to present often highly placed individuals with the opportunity to divert weapons. As the following sections note, however, curbing high-order diversion is not beyond the scope of arms management, and there are certain basic measures that can be adopted to dissuade illicit activity. For the most part these involve taking steps to ensure that the departments responsible for intra-state arms and ammunition transfers are accountable to central authorities and that these flows are well documented. The greatest danger of high-order diversion arises where individuals, departments, and military units are able to misuse the authority granted them by the state to divert arms and ammunition in their charge, while still receiving a supply of weapons from the national stockpile.

Official conspiracy in high-order diversion

In 1992 the value of Ukraine's military stocks was estimated at USD 89 billion. By 1998 around USD 32 billion had been stolen and much of it resold abroad.¹⁹ Loss on this scale does not simply result from the kind of low-order

diversion described earlier. It occurs because large parts of a state's stockpile management system become opaque, allowing senior individuals—and sometimes entire departments—unregulated control over the management and transfer of weapons and ammunition.

This 'personalized control' facilitates illicit diversion and can result from a number of factors, including: administrative breakdown following major political upheaval (for example, Ukraine and other eastern European states in the early 1990s); loss of control over large parts of the security sector (such as Cambodia and Russia in the 1990s); and ad hoc arms management systems that give unregulated actors control over key parts of the military supply chain (for example, contemporary Iraq, described in detail below).

In all of these instances high-order diversion does not necessarily result from breaches in security or lax accounting in a particular depot or facility—although this may often occur under the same conditions. Rather, it is characterized by the wholesale redirection of large volumes of weaponry out of the state's arms management system and onto the illicit market.

Several interacting factors appear to be pivotal in facilitating high-order diversion.

First, political instability and economic downturn prompt short-term gain-seeking activities among all levels of security force personnel (and indeed society at large). Second, nationwide illicit activity rises as the state and its institutions weaken, creating increased illicit demand for military materiel by organized crime or non-state armed groups. Third, and pivotally, security force oversight and accounting mechanisms become weak and prove unable to prevent or identify diversion.

Turbiville's (1995) analysis of rising crime in the Russian armed forces in the late 1980s and early 1990s is illustrative. The collapse of the Soviet system prompted a general increase in all forms of crime within the security forces (around 14.5 per cent between 1988 and 1989). A parallel, flourishing black market provided a ready demand for all forms of stolen state assets. To compound this, the institutions responsible for curtailing intra-military crime (namely, military counterintelligence operating under the KGB) were ill-equipped to deal with it, and were quickly dissolved, along with the KGB, in 1991. Incidences of weapons theft, in particular, grew dramatically under this permissive environment, rising 50 per cent between 1989 and 1990 and a further 64 per cent between 1992 and 1993 (Busza, 1999, p. 565).

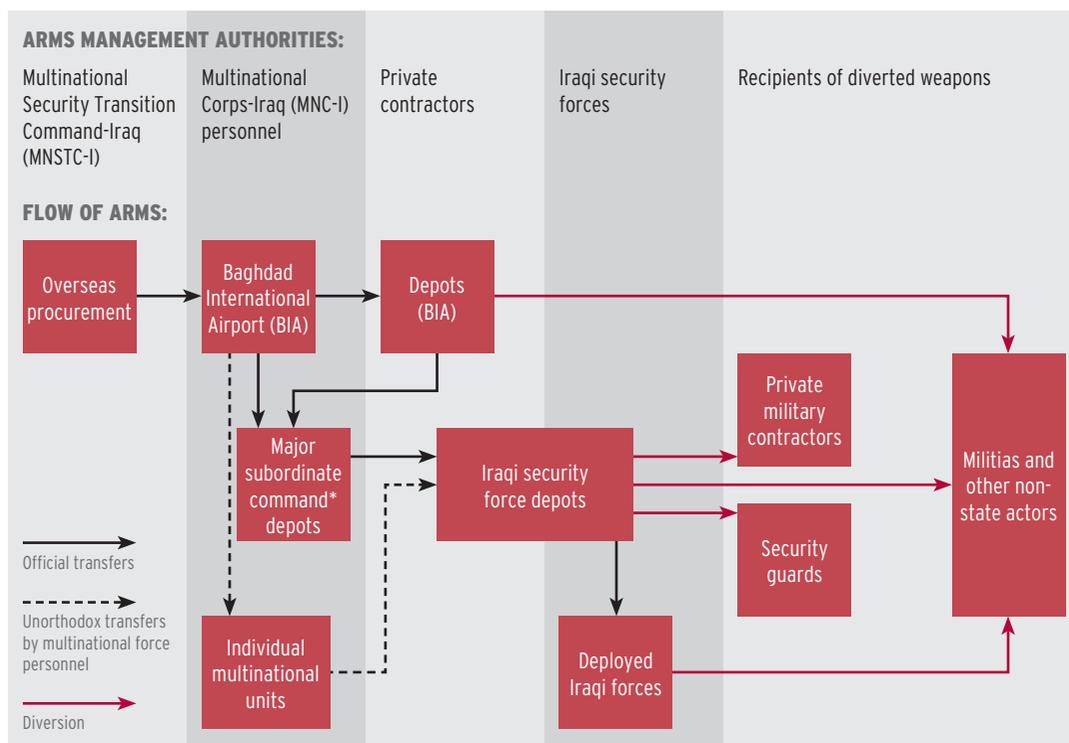
Very often it was the 'compartmentalization' of arms management responsibilities that appeared to have the greatest bearing on diversion. Highly placed military officials were able to capitalize on their personal command of military finances, equipment, and personnel—and the fact that their units continued to receive military equipment—to plunder state assets. Russian parliamentary investigations in 1994, for instance, charged the Soviet/Russian Western Group of Forces (WGF) commander-in-chief with creating an environment 'in which illegal commercial activities by his senior commanders were unrestricted if not actively encouraged' (Turbiville, 1995).

Similar situations have arisen elsewhere when senior military officials have been able to use their personal control over parts of the military to divert arms and ammunition, while still receiving a ready supply of weapons from the national stockpile. In 1990s Cambodia, for instance, military officers were able to sell entire armouries belonging to 'phantom' military units, which existed only on paper (JIG, 2000).

At higher levels in the defence establishment this compartmentalization of control can result in massive cases of diversion. In April 1997, for instance, Russian authorities noted that arms worth over USD 1 billion had been transferred to Armenia since 1992 without any state-to-state agreement or formal government permission. Among other things, the shipments included more than 230 million rounds of small arms ammunition. While the defence minister

'Personalized control' facilitates diversion.

Figure 2.4 Arms management responsibilities in Iraq, 2004-2005



* Multinational divisions responsible for seven different geographic areas of operations.
Sources: USGAO (2007); Schmitt and Thompson (2007)

at the time claimed no knowledge of the transfers, the chief of the general staff was aware of the policy, which had commenced under the former defence minister (JIG, 1997).

Opacity and the associated compartmentalization of arms management responsibility can be strong risk factors in diversion. They are not always confined to states that experience major systemic failure, and can occur in the most efficient military systems when those systems are subverted. Even when highly organized modern military systems are nominally responsible for arms management, control over arms and ammunition can become fragmented when insufficient attention is paid to ensuring transparency and accountability for weapons.

In July 2007, for instance, the US Government Accountability Office (USGAO, 2007, pp. 10–11) noted that the Department of Defence and Multinational Force in Iraq could not account for more than 190,000 weapons reportedly issued to Iraqi security forces between June 2004 and September 2005. As a result of a failure to institute an effective accounting system, many of these weapons may have entered the illicit market (TRANSFER DIVERSION). But as one director at the GAO later reported to *The New York Times*, the problem went beyond accounting practices (Schmitt and Thompson, 2007).

As Figure 2.4 sketches, in the Iraq case a lack of oversight and accounting was compounded by the fact that arms and ammunition moved relatively unchecked between a number of disparate authorities, ranging from multinational forces to private contractors and Iraqi security forces. The lack of oversight and the unorthodox measures some military units adopted in order to shorten a lengthy supply chain made it impossible to establish where many

weapons and ammunition were stored, and in what quantities. As a result, entire arsenals were diverted en route between one nominal authority and another (Schmitt and Thompson, 2007).

Policy implications

High-order diversion is a systemic problem, involving the plunder of all types of state assets, ranging from theft of military funds to illegal loans of government capital, the use of military aircraft for commercial charter, and the expropriation of military facilities and land. Taken at face value, controlling diversion of this magnitude appears to be contingent on very broad structural changes to state administrations and has linkages to wider issues such as good governance and accountability. But relatively simple arms management procedures could do much to control high-order diversion.

The Iraq case is one in which accounting procedures and effective oversight could have both deterred diversion and made its detection and policing much more effective. However, these measures were not implemented because military officials deemed that the rapid transfer of weapons and ammunition was more important than ensuring the security of those arms. As the USGAO report (2007, p. 9) noted:

Until December 2005, no centralized set of records for equipment distributed to Iraqi security forces existed . . . a fully operational distribution network was not established until mid-2005, over 1 year after [the multi-national force] began distributing large quantities of equipment to the Iraqi security forces. [The multi-national force] did not have the personnel necessary to record information on individual items distributed to Iraqi forces. Further, according to [multi-national force] officials, the need to rapidly equip Iraqi forces conducting operations in a combat environment limited [the multi-national force's] ability to fully implement accountability procedures.

The other cases noted above, in particular that of Ukraine, demonstrate that curtailing diversion may sometimes be a more challenging task and one related to deeper reforms of state security and defence-export sectors. In these cases high-order diversion may be particularly difficult to eradicate because officials use their positions to direct extant stockpile security systems—and the broader arms management system—to their personal advantage. The problem may not be one of stockpile management per se, because arms can be well secured in their particular facilities and among military units, but that departments may act in isolation from the rest of the government apparatus to engage in illicit transfers that *appear* to be sanctioned by the state. In such cases officials typically divert arms and ammunition using the network of international contacts, supply chains, and resources of the state itself.

However, curtailing high-order diversion is not an insurmountable challenge. Addressing it requires detecting it in the first place. Effective stockpile management and, in particular, accounting procedures have the potential to play a critical role in identifying corrupt officials and weak points in the national stockpile. High-order diversion may be a deep structural problem in the defence sectors of some states, but relatively basic management mechanisms may be pivotal in combating it in others.

Centralized record-keeping is one example where records of transactions made by all departments are stored by one, central authority—thereby minimizing the risks that those departments, or individuals within them, can gain relatively unchecked power to divert munitions. The United Kingdom, for instance, gives particular branches of the armed forces arms management—notably accounting—responsibilities for certain weapons systems. Each branch is responsible for all weapons of its allocated category within the national stockpile, regardless of which other branches

High-order diversion
is a systemic problem.

use the weapons. This measure is in place for logistical reasons.²⁰ However, it arguably illustrates how cross-departmental systems of responsibility could potentially minimize the risk of any department gaining unchecked power over weapons and ammunition—particularly in countries where the risks of high-order diversion are very much greater than in the United Kingdom.

Military collapse

Military collapse provides the most favourable conditions for large-scale diversion of arms and ammunition. State forces lose control over stocks or disband, resulting in the dispersal of these weapons throughout society. Sometimes military collapse is associated with the collapse of the state itself, such as in Liberia and Somalia in the 1990s. In other cases it results from militaries briefly losing control of national stockpiles (such as Albania in 1997) or from armed forces disbanding yet retaining their weapons (for example, Iraq in 2003).

**Large sections
of the national
stockpile become
privatized.**

While such large-scale ‘external’ shocks to military control over arms and ammunition may appear to pose an insurmountable challenge to curtailing diversion, as the following sections note, the risk is aggravated—and even bred—by the adoption of arms management polices that fundamentally weaken existing accounting and oversight systems.

Policies prior to collapse

One of the most striking aspects of diversion resulting from military collapse is that it is often closely linked to the factors that prove pivotal in the collapse itself. In cases where states have dissolved into a morass of competing armed factions, many of these factions have been armed by the state in question.

Faced with non-state challenges to their monopoly on violence, the response of numerous state administrations has been to further erode this monopoly by arming ‘aligned’ civilian factions. In Haiti, for instance, this process occurred under both the Aristide and Cédras presidencies of the 1990s. While nominally under state control at one time, many militias subsequently became embroiled in localized, politically motivated violence and crime that continues to challenge the creation of a strong state (Muggah, 2005, pp. 1–7, 50–52).

Diversion occurs in these contexts, not necessarily because state parties act unlawfully in distributing arms (although they may) but because they retain little or no control over state-provided weapons, resulting in a hazy delimitation between legal and unlawful uses. Large sections of the national stockpile become privatized and subject to diversion or illicit use. Minimal control over state-armed groups often leads to their use of weapons in contravention of the objectives of the state or in direct opposition to it.

Whether symptomatic of military collapse or precipitating it, state-armed militia groups have proved pivotal in sustaining armed conflict following the most extreme cases of state collapse, including Liberia, Sierra Leone, and Somalia.²¹ These practices can prove costly when governments and international agencies have to fund disarmament programmes that are aimed explicitly at removing weapons from such militia groups.²²

Dealing with the aftermath

Dealing with the large volumes of arms released by collapsing militaries is critical to ensuring that the weapons do not become diverted to illicit users.

In 2004 the Small Arms Survey estimated that more than 4 million small arms alone were released into Iraqi society from the stocks of state security forces (Karp, 2004, p. 49). This was technically not a case of diversion. There is no law against possession of military weapons in Iraq; they did not cross a legal-illicit threshold when the Iraqi army disbanded.

Box 2.3 Diversion and improvised explosive devices

Improvised explosive devices (IEDs) can be made from any explosive material, including items with explicitly civilian applications, such as compounds derived from nitrate-based agricultural fertilizers, and military explosives, such as TNT²³ and RDX²⁴ (DHS, 2005; TRADOC, 2007). Many of these ingredients are readily available to non-state armed groups around the world.

Diversion of light weapons ammunition from state stocks, however, poses a particular threat because it involves the release of weapons with specific military capabilities onto the illicit market. These weapons can be used, in their entirety or as components, to manufacture IEDs. They differ from civilian explosives because they are designed exclusively for military applications. Light weapons ammunition (as well as ammunition for larger conventional weapons) can be used in the following ways:

- removal of explosives from warheads and subsequent use in home-made bombs and projectiles;
- remote firing of projectile weapons, such as mortars and rocket launchers and ammunition thereof;
- adaptation of existing ammunition, such as mortar bombs, to detonate under pressure (mines); and
- use of shaped charges from anti-armour weaponry to increase the penetrative capacity of IEDs.

These features make national stockpiles attractive targets for non-state armed groups, allowing them to drastically increase both the speed with which they can manufacture IEDs and the capacity of these weapons against modern military targets. They have proven especially deadly in Iraq (LIGHT WEAPONS).

However, what happened to those weapons after the event is critical. By dramatically increasing the gross volume of weaponry in society, military collapse or disbandment also increases the numbers that are available to illicit users, including criminals and insurgent groups. In Iraq former state-owned weapons have been used in attacks ranging from small arms shootings to MANPADS attacks on civilian airliners (Bevan, 2004, p. 84) and roadside bombings. Notably, the ready availability of conventional ammunition with specific military capabilities has greatly facilitated the development of effective improvised explosive devices (IEDs), as Box 2.3 illustrates.

The dispersal of arms following military collapse illustrates how important it is for states to maintain effective control over national stockpiles, even at times of internal strife. Any weapons and ammunition that become subject to minimal oversight (whether through deliberate state distribution policies or military collapse) pose a threat to states, societies, and international peace and stability. Many states continue to rely on militia forces for the suppression of armed insurrection. History proves that, in cases ranging from the Congo to Colombia, it is a dangerous game to play, and groups that are subject to little state oversight and arms management can direct violence towards the state that created them.

In states where the national stockpile has already diffused into society, recovering weapons and ammunition should be a matter of priority. In Iraq, for instance, US military officials estimated that between 540,000 and 900,000 metric tonnes of ammunition and explosives were stored in around 130 sites



Sign in a gun shop window in the aftermath of Hurricane Charley, Port Charlotte, Florida, August 2004. © Mario Tama/Getty Images

in autumn 2003. However, by December 2003 only 227,000 metric tonnes had been partially secured by coalition forces and the rest remained at high risk of diversion or was already on the black market (Klingelhofer, 2005).

DIVERSION FROM THE CIVILIAN STOCKPILE

The civilian stockpile (see Figure 2.1) encompasses a wide range of arms and ammunition storage locations, ranging from manufacturers and wholesalers to gun shops and weapons stored at home or in vehicles. Diversion from any one of these locales has the potential to contribute to unlawful use, armed crime, and violence.

In particular, the diversion of civilian-owned weapons and ammunition provides a ready source of weapons that are later used in crime. The following sections focus primarily on this phenomenon—dividing it into higher and lower orders of magnitude, as outlined for the case of military stockpiles above.

At one end of the spectrum arms and ammunition are particularly susceptible to theft when inadequately stored in homes and vehicles. In these cases of low-order diversion, weapons often enter the illicit market as a by-product of other illegal activity, such as burglary and car theft. At the other end of the spectrum, relatively large quantities of weapons held in gun shops and wholesale warehouses can be attractive targets for organized crime, often with links to the international illicit market. These high-order cases of civilian weapons diversion can in some instances be a source of arms and ammunition for insurgent and terrorist groups.

Low-order civilian stockpile diversion

One in every 1,000 civilian weapons may be subject to diversion. Low-order civilian stockpile diversion is the theft of relatively minor quantities of arms and ammunition from gun shops, civilian homes, and vehicles. It also includes cases where firearms sellers have sold arms and ammunition to persons who are unauthorized under national legislation to possess firearms (PUBLIC HEALTH APPROACH). Low-order diversion serves a relatively localized market, although it may have cross-border dimensions.

Theft from civilian holdings releases many hundreds of thousands of legally owned arms onto illicit markets each year. Data for ten countries²⁵ suggests that around 1 in every 1,000 weapons in civilian hands may be subject to diversion (Karp, 2004, p. 63). Taken at face value, this number may seem small, but, given a global civilian stockpile of around 650 million firearms (Karp, 2007, p. 39), diversion from civilian stocks is, cumulatively, a grave problem. At a diversion rate of 1:1,000 civilian weapons, annual losses could total 650,000 weapons.

Illegal sales or resales are also a significant source of diversion. In the United States, for instance, licensed gun dealers are prohibited from selling weapons to a convicted felon, a person convicted of a domestic violence misdemeanour, or a person previously committed to a mental institution. This interdict does not prevent some dealers from selling to an eligible intermediary, who then immediately resells to a prohibited purchaser—a process known as ‘straw purchasing’. Straw purchasing is easier because civilian-owned firearms are typically not registered, so immediate retransfer entails little or no risk for the intermediary. Technically, if this kind of private sale is conducted with the dealer’s knowledge that the end-user is ineligible, the transaction is illegal and constitutes diversion. There is no federal law requiring the intermediary to obtain proof of the final purchaser’s eligibility, although some states require these secondary sales to go through a formal background check. Straw purchasing is particularly problematic because many US criminals have a preference for brand-new weapons, which can be obtained only from licensed gun dealers (LeBrun, 2007) (PUBLIC HEALTH APPROACH).

Despite unlawful practices such as straw purchasing, however, most arms and ammunition diversion from civilian holdings appears to originate from home burglaries. An Australian study by Mouzos and Sakurai (2006, p. 35), for instance, notes that more than 70 per cent of stolen firearms in the reporting period (February–July 2004) were taken from private residential premises. Motor vehicles comprised the second-largest source (14 per cent), and business premises the third (10 per cent). The situation in the United Kingdom is similar (see Figure 2.5). Data for the United States, while aggregated differently, suggests that domestic burglary is responsible for a comparable 60 per cent of all stolen weapons (Rand, 1994).

Most such thefts appear to accompany other, economically motivated crime. In the Australian case 58 per cent of weapons were stolen at the same time as other goods, leading Mouzos and Sakurai (2006, p. 39) to conclude that opportunistic household burglary was a major source of diversion.

Low-order diversion from the civilian stockpile appears to respond to highly localized (and in some sense ad hoc) demand.²⁶

Its primary beneficiaries appear to be petty criminals. Studies in the United States, for instance, reveal that as many as 50 per cent of criminals in correctional facilities have stolen a weapon at some point in their career (Zawitz, 1995, p. 3).

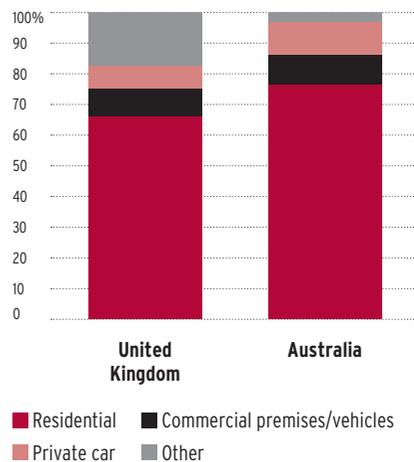
Potentially more serious cases arise where criminals have explicitly targeted homes and gun shops in order to acquire arms and ammunition. In Australia, for instance, 40 per cent of cases in which a weapon was stolen targeted *only* arms and ammunition and no other commodities (Mouzos and Sakurai, 2006, p. 39), suggesting that arms acquisition was the sole motive for the theft.

Arms and ammunition that enter the illicit market as a result of theft from the civilian stockpile typically feed local crime, but can also have much wider impacts. In May 2007 Florida law-enforcement officials made arrests over the theft of weapons from gun shops in the United States, which were later shipped via Florida International Airport to Puerto Rico (UPI, 2007). There are other international dimensions to domestic diversion. According to a report by the Mexican National Defence Commission, for instance, an estimated 99 per cent of weapons confiscated from criminals in Mexico had been sourced in the United States (Núñez, 2007). There is evidence to suggest that the United States–Mexico cross-border arms trade is often organized by criminal gangs linked to the drugs trade (Roig-Franzia, 2007).

High-order civilian stockpile diversion

High-order diversion of civilian holdings occurs when criminal groups target larger, non-state arms and ammunition storage facilities, such as gun shops and wholesalers. This chapter labels the process ‘high-order’, not because it shares structural similarities with high-order diversion of military stocks, but simply because it is very much larger in scale than the often petty thieving from civilian holdings described above. High-order civilian diversion is often linked to large organized criminal networks and can sometimes be used to fuel insurgency.

Figure 2.5 Proportion of locations from which firearms were stolen in Australia (n = 372) and the United Kingdom (n = 4697)



Notes: Australian data for period 1 February–1 July 2004; UK aggregated from years 1999–2006.
Sources: Mouzos and Sakurai (2006, p. 37); UKHO (2000; 2001; 2003; 2004; 2005; 2006; 2007)

In countries with high civilian firearm ownership rates, organized criminal gangs can source weapons and ammunition through illicit trade that has its origin in the kinds of small-scale theft noted above. However, where access to firearms is more difficult, or certain types of weapon are scarcer, criminals have robbed more difficult targets such as larger gun shops and other secure warehouses. Often these attacks are orchestrated by organized criminal gangs, which have the necessary resources to engage in this form of robbery.

In September 2007, for instance, thieves stole weapons and ammunition from a gun shop in Ipswich, Australia, in a sophisticated robbery that involved piercing the roof of the building, disabling the alarm system, and removing the hard drive of the computer surveillance system. The theft involved more than 50 firearms and large quantities of ammunition. Police were reportedly concerned that the robbery exhibited the hallmarks of organized crime (ABC, 2007; Swanwick, 2007).

In other instances the prospect of gaining access to specific types of weapon seems to have prompted criminal organizations to target commercial establishments. In October 2007 criminals robbed a gun shop in Florida. The robbery was notable because the weapons stolen were selected by type. The thieves in question took only semi-automatic versions of military assault rifles, including 57 Armalite- and Kalashnikov-pattern weapons. These high-velocity weapons are reportedly favoured by organized crime (Curtis, 2007).

**It is relatively easy
for criminals to
acquire weapons.**

High-order diversion can therefore be a transition point whereby criminal factions gain access to far greater firepower—enhancing their status and offensive capacity *vis-à-vis* other factions, but also presenting a greater challenge to the forces of law and order. In Rio de Janeiro, for instance, there has been a marked increase in the acquisition of high-powered rifles and sub-machine guns by the city's organized drug factions since the late 1980s (Downey, 2003, pp. 96–97), not least because of their offensive capacity against security forces (Bevan and Dreyfus, 2007, pp. 304–05).

In some cases the challenge to the state posed by high-order diversion may not be restricted to organized crime. Gun shops and other civilian storage facilities are tempting targets for non-state armed groups—particularly those that experience supply difficulties. In 2005, for instance, Chechen fighters in the town of Nalchik targeted two shops as part of a wider attack that included an assault on a police station (Chivers, 2005).

In many countries, therefore, the availability of large quantities of relatively poorly secured civilian arms and ammunition poses a latent threat to states and societies.

Securing civilian holdings

Many civilian holdings are insecure and present criminals with easy opportunities to divert arms and ammunition. The main reason for such accessibility is poor physical security of arms and ammunition—primarily in homes.

Firearms are stored, unlocked, in 40 per cent of US homes. In around 30 per cent of these unlocked cases, weapons are stored while loaded, with a further 15 per cent of unlocked weapons stored alongside ammunition (RAND, 2001). There is no reason to suspect that the United States differs from many other countries, and the figures are clear: it is relatively easy for criminals to acquire weapons, including ready-to-fire weapons.

The United Kingdom, for instance, has particularly low levels of civilian weapons holdings, and yet more than 700 weapons are stolen annually.²⁷ Most of these thefts are the result of criminal access to inadequately secured weapons.²⁸ While UK legislation stipulates that weapon must be kept 'safe and secure' (Box 2.4), it does not specify measures required to achieve this or minimum storage standards. Such vagueness as to what constitutes adequate security appears to lead to the uneven application of security measures in many countries.

Table 2.3 Modes of firearms theft from secured containers in Australia, February–July 2004 (n = 189)

Forced open	45%
Removal of whole safe	12%
Keys found and used	12%
Locks cut	10%

Source: Mouzos and Sakurai (2006, p. 11)

Around 60 per cent of weapons stolen from Australian homes are ‘secured’ in safes and other locked receptacles that comply with Australian laws on firearms storage. The findings displayed in Table 2.3 suggest, however, that these storage practices are insufficient, and thieves had the time to break into safes, cut locks, or locate keys. In some cases safes could be removed and broken into at a later date.

Box 2.4 Evidence of increased physical security? The United Kingdom post-1997

The United Kingdom has experienced a dramatic decline in the number of reported shotgun thefts since 1997, a trend that is arguably illustrative of increasing physical security of weapons in the country.

Figure 2.6 (see overleaf) plots reported thefts of shotguns and handguns in the United Kingdom between 1986 and 2006. It illustrates a pronounced decline in the number of thefts of each type of weapon reported to the police following the 1996 shooting of 16 children and a teacher in Dunblane, Scotland. The shooting resulted in the 1997 Firearms Amendment Act, which banned virtually all²⁹ handguns from private ownership (UK, 1997).

Taken at face value, the data in Figure 2.6 appears to reflect the impact of the 1997 Act. However, the Act did not significantly affect civilian shotgun possession, which suggests that other factors may be responsible for the rapidly diminishing reports of shotgun thefts.

There is reason to suspect that overall shotgun ownership rates did not fall particularly dramatically after 1997—and certainly not as fast as handgun ownership, which was, by contrast, highly restricted by the Act. The marked (30 per cent) decrease in shotgun theft reporting rates in Figure 2.6 is therefore unlikely to result from a decline in opportunity for theft.

The selective scope of the Act suggests that the theft of shotguns may have diminished as a result of non-legislative factors, including increased public awareness of the dangers of weapons and, pivotally, the fact that authorities responsible for issuing firearms licences made the process contingent on the security of weapons—including spot checks of domestic security arrangements.

The 1997 Act did *not* impose tighter controls on shotgun storage practices beyond those of previous Acts, which merely specified weapons should be ‘kept safe and secure’ at all times. As the Metropolitan Police (2007) notes:

The Firearms Acts are not specific regarding security except to state that the weapons must be kept safe and secure at all times so as to prevent unauthorised access, as far as is reasonably practical . . . It therefore follows that the issuer of the certificate [the Police] must set the standards to be met, within the limitations of the Acts. . . . all shotguns and firearms should be kept in bona-fide gun cabinets. That is, cabinets which are purpose built for the keeping of shotguns and firearms. The cabinets must be located within the confines of the house and not stored in a garage or outbuilding. They should be rawl-bolted to a solid brick wall and out of sight of casual callers. Section 1 ammunition should be stored separately and securely from Section 1 weapons. BS7558 is a British Standard for gun cabinets since 1992 which practically all cabinets, sold by reputable Registered Firearms Dealers, will meet.

Given the dramatic decline in UK shotgun thefts post-1997 (see Figure 2.6), policies such as these appear to have played a critical role in increasing the security of firearms and preventing diversion.³⁰ Although UK arms and ammunition storage standards are far from optimal, applying a relatively simple set of storage criteria appears to be one of the key reasons for a reduction in reported shotgun theft.

Figure 2.6 **Shotguns and handguns stolen in the United Kingdom: 1986-2005 (n = 15,063)**



Note: Event separators are drawn at the beginning of the year in which the event occurred and in which data collection for that year commenced.

Source: UK (2006)

The same principles that apply to securing military stockpiles apply equally to civilian stocks. As Table 2.4 illustrates, most basic stockpile management approaches that can be applied to national security force stockpiles have civilian equivalents. But the findings in this section, and Table 2.4, show that in many (if not all) countries civilian stockpile management and security does not even begin to meet the basic tenets of security applicable to national stockpiles, particularly with respect to ammunition.

Civilian stockpile management falls far short of military standards, for several reasons. First, and despite the fact that many states have national registration systems for firearms, ammunition is almost always poorly regulated. Diverted ammunition cannot be traced back to its original owners, making it difficult to establish either the scale of ammunition diversion or the nature of security weaknesses for civilian holdings.

Table 2.4 **Standard military stockpile security measures and civilian equivalents** (particular weak points marked in red)

Military stocks	Civilian stocks
Accounting	Firearms registration
Records of stocks issued	Firearms/ammunition registration
Records of stocks expended	n/a
Monitoring	Periodic registration
Physical inspection	Periodic (yearly) registration of arms
Stock audits	Inspection of registered weapon (yearly)
Stock loss/theft reports	Mandatory reports of theft to police
Lot-marking by unit	Lot-marking by retailer and records of sales
Stock security	Domestic/commercial security
Perimeter security; secure doors and access routes; lockdown of portable weapons	Weapon safes; secure doors; keys stored elsewhere
Separation of arms and ammunition	Separation of arms and ammunition
Guards, dog patrols, and random patrols	Electronic alarms
Proximate additional security forces	Electronic alarms (perhaps linked to police stations)

Second, only in a handful of countries is there anything approaching the kind of stock audit expected within functional stockpile management systems of national stockpiles. Very few states have systematic checks or periodic re-registration which might enable law-enforcement officials to determine whether private holdings have been lost or stolen, and to take appropriate measures. Theft reporting is mandatory in effective military stockpile management systems, but this is not the case with most thefts from civilian holdings.

Third, the physical security of civilian holdings remains poor. Measures taken to *slow, detect, and counteract* intrusion reduce the risk of diversion. Some states, such as Australia and the United Kingdom, specify storage criteria. Yet even these may be insufficient. In the United Kingdom, for instance, between 1999 and 2006 the rate of reported small arms loss or theft from military establishments was 1 in 29,000.³¹ The rate of civilian loss or theft was approximately 1 in 400 firearms.³² A safe or gun cabinet is not sufficient in many cases to prevent theft.

In the absence of measures to detect and counteract theft, such as alarm systems, thieves may be able to spend considerable time penetrating safes and other storage systems. It is worth noting that only one of the premises in the Australian study was fitted with an alarm (Mouzos and Sakurai, 2006, p. 47).

Lessons from national stockpile security suggest that physical security extends beyond locks and doors to regular patrolling and the stationing of security forces to rapidly interdict the theft of arms. This is not feasible in the case of civilian holdings, but there is arguably some justification for claiming that electronic alarms—and particularly systems that notify security forces of thefts of registered weapons—could do much more to bring civilian diversion within acceptable limits.

The security of homes, vehicles, or any other repositories of civilian weapons holdings remains substandard in most countries. Whether through changes in national legislation, regulatory measures, or awareness campaigns focusing on secure storage, curtailing diversion will be contingent on effectively securing civilian holdings. Although there are critical variations in the scale and types of stock, physical measures adopted to control diversion from the civilian holdings differ very little from those that are required for national stockpiles.

CONCLUSION

Diversion lies at the heart of illicit arms proliferation. In varying degrees of severity, in almost all countries it facilitates the acquisition of arms and ammunition by criminals, terrorist organizations, and non-state armed groups. By providing a source of arms and ammunition to users who might otherwise have difficulty acquiring arms, it intensifies armed conflict and criminality, threatening communities, societies, and the state itself.

This chapter is deliberately wide in scope, recognizing that diversion of munitions operates at many different levels. It highlights the fact that all forms of diversion play a mutually supporting role in sustaining illicit proliferation. In recognition of this fact, the chapter emphasizes the need for comprehensive, mutually reinforcing controls over the security of all stocks of arms and ammunition—whether in the hands of civilians or state agents.

Effective control requires measures at a number of levels. It may involve tightening national stockpile security through the more effective management of military and police stockpiles. Equally, it requires comprehensive attention to national firearms laws and non-legislative regulations governing how civilians store their weapons at home.

In some instances controls may extend to broader changes in the way states manage arms and ammunition. Security sector reform to improve accountability within administrations is one measure that could protect national

stockpiles from high-order diversion. In other cases, controls are contingent on improving national and international regulations over the export of arms and ammunition.

Although resources play a critical role in the lack of progress towards enhanced stockpile security in many countries, a growing number of states participate in bilateral and multilateral initiatives that are designed to assist states with enhancing stockpile security. Recipients of this kind of support, however, remain few in number, and there is a clear need for donors to better advertise such initiatives and the fact that they can make a tangible difference to stockpile security.

The most severe cases of diversion—such as can occur with state collapse—are dependent on broader political factors that may seem beyond the scope of small arms and light weapons control. Nevertheless, even in these catastrophic instances, diversion can be alleviated by concerted efforts to address weak points in national stockpile management at the earliest possible moment, and by ensuring that any subsequent rearmament occurs under effective arms management systems.

Some measures to control diversion are relatively easy to apply—such as placing a padlock on a door, installing a gun safe at home, or posting a guard at a weapons storage facility. But in many countries, whether as a result of insufficient political will or through a lack of awareness, these small issues remain unaddressed. The primary barrier to preventing most cases of diversion is not expenditure but foresight.

The interface between the legal and illicit arms markets lies at home: with private citizens and state security forces. Diversion is not a product of shadowy deals in the world's crime and conflict zones, but a problem that stems directly from the negligence of legal users. Unless greater attention is paid to this fact, states and societies will continue to 'shoot themselves in the foot'. ■

ANNEXE 2.1

Model security plan

	Item	Comments
1.	Registration of the name, location, and telephone number of the establishment security officer.	One, single security authority. This person, or a deputy, must be contactable 24 hours a day.
2.	Scope of the plan.	What does the plan cover: which areas, individuals, and possible scenarios?
3.	Content of the stockpile.	Types of weapon. Types of ammunition nature.
4.	Security threat.	What sorts of interests might try to remove weapons and when (e.g. nightly theft, armed robbery, children).
5.	Detailed geographic map of the site location and its surroundings.	This should clearly indicate fences, access roads, bunkers/storage areas, and access routes.
6.	Detailed diagram of the layout of the site, including locations of: <ul style="list-style-type: none"> • all buildings and structures • entry and exit points • electricity generators/substations • water and gas main points • road and rail tracks • wooded areas • hard- and soft-paved areas • guard points 	Ideally a proper survey map of the site at around 1:5,000 scale or less.
7.	Outline of the physical security measures to be applied to the site, including, but not limited to, details of: <ul style="list-style-type: none"> • fences, doors, and windows • lighting • perimeter intruder detection systems • intruder detection systems • automated access control systems • guards • guard dogs • locks and containers • control of entry and exit of persons • control of entry and exit of goods and material • secure rooms • hardened buildings • closed-circuit television 	
8.	Security responsibilities (including, but not limited to, the following personnel, as applicable): <ul style="list-style-type: none"> • security officer • guards and guard commanders • transport officer • inventory management and verification personnel • all personnel authorized to have access to the site 	The greatest possible specificity of responsibilities, even on a case-by-case basis—e.g. 'In the event of an attempted break-in, the security officer shall be responsible for...' Even personnel with no specific security brief (transport officer, other personnel) may have security responsibilities—e.g. 'You are responsible for locking all doors you have previously unlocked.'

9.	Security procedures to be followed in: <ul style="list-style-type: none"> • stock reception areas • pre-storage processing • bunkers • during all stock withdrawals 	For example, how are people to be admitted to perform these functions? What security procedures should be followed when withdrawing stocks?
10.	Control of access to buildings and compounds.	Detail fences, gates, and how they operate, for whom they are to be opened, etc.
11.	Transport procedures	<ul style="list-style-type: none"> • Who provides security? • How is handover to another authority to be secured? • How are external recipients to be identified?
12.	Control of security keys (those in use and their duplicates).	<ul style="list-style-type: none"> • Where are keys to be located? • Who can have them? <p>It is often a good idea to attach keys permanently to large metal key tags so that they are highly visible. New technologies such as embedded Radio Frequency Identification (RFI) chips can aid in locating keys.</p>
13.	Security education and staff briefing.	<ul style="list-style-type: none"> • How are the staff to be briefed? • When? • By whom? <p>New personnel must be briefed as soon as possible. Refresher briefings should be conducted as a matter of course.</p>
14.	Action on discovery of loss.	<ul style="list-style-type: none"> • The security aspects of every loss must be investigated. • Lessons must be drawn and amendments made to the security plan if necessary.
15.	Details of response force arrangements (e.g. size, response time, orders, means of activation and deployment).	<p>How and when to activate the site's guard response force? Expected response times and actions.</p> <p>How to contact the police/security forces?</p> <p>How long will it take them to respond?</p>
16.	Actions to be taken in response to activation of alarms.	Who must deploy where when an alarm is sounded?
17.	Security actions to be taken in response to security emergency situations (e.g. robbery, attack).	Clear instructions on the use of force, on alerting police and security services, and on post-event investigation.
18.	Security actions to be taken in response to non-security emergency situations (e.g. fire or flood).	You must have procedures in place to coordinate activities of rescue and emergency teams with the security needs of the site (access in times of emergency, securing keys, avoiding theft during the confusion).

Sources: This plan has been adapted from the OSCE (2003a) 'Best Practice Guide on National Procedures for Stockpile Management' by Michael Ashkenazi of the Bonn International Centre for Conversion (BICC) and is part of a chapter on stockpile security in Bevan (2008a).

LIST OF ABBREVIATIONS

DoD	(United States) Department of Defense	MANPADS	Man-portable air defence systems
IED	Improvised explosive device	RPNGC	Royal Papua New Guinea Constabulary
LAW	Light anti-tank weapon		

ENDNOTES

- 1 It is worth noting that the SS109 and .223 Remington are not entirely interchangeable. The military SS109 differs from the civilian .223 in having a higher gas pressure. This means that, while the .223 can be fired from weapons intended for the civilian market, when fired from military rifles it delivers lesser performance than the SS109. Conversely, firing the SS109 from civilian-specification rifles can cause excessive stresses to the weapons and may present a danger to the user.
- 2 Field research in Kenya, Uganda, and Sudan. Conducted by James Bevan, 2005–08.
- 3 Size should not be overemphasized as a factor in diversion. In 1997, for instance, one person was convicted of stealing a Sheridan light tank, 17 armoured personnel carriers, and 136 other vehicles from the Fort McCoy Army Base (JIG, 2000).
- 4 Field-based ammunition tracing conducted by James Bevan for the Small Arms Survey, 2006–08.
- 5 Field-based ammunition tracing conducted by James Bevan for the Small Arms Survey, 2006–08.
- 6 See for instance the United Nations Sanctions Committee report on the Democratic Republic of Congo, which noted: ‘The failings in the establishment, management and sharing of arms inventories in the Democratic Republic of the Congo are factors that facilitate illegal appropriations or diversions. The few databases that do exist are too inaccurate to enable an efficient enquiry’ (UNSC, 2006, para. 24).
- 7 Field-based ammunition tracing conducted by James Bevan for the Small Arms Survey, 2006–08.
- 8 For further information on accounting, see OSCE (2003a, p. 8; 2003b, p. 4).
- 9 Diversion of this type is not restricted to domestic security forces. In September 2006, for instance, the South African Defence Minister, Mosiuoa Lekota, reported that ‘50,000 rounds of ammunition, 97 mortar bombs, 46 R-4 assault rifles, three light machine guns, two pistols and two grenades had been lost or stolen in the course of [South African] peace-support missions’ in Burundi, the Democratic Republic of Congo, and Sudan (Glatz and Lumpe, 2007, pp. 85–86).
- 10 Presentation by Dr Owen Green to the Joint Arms Control Implementation Group (JACIG), RAF Henlow, United Kingdom, 19 September 2007.
- 11 State Department Official cited in Stohl, Schroeder, and Smith (2007, p. 124).
- 12 The seven countries noted by Florquin and Berman (2005) are: Côte d’Ivoire (p. 249), Guinea-Bissau (p. 290), Liberia (p. 302–03), Mali (p. 313), Nigeria (p. 341), Senegal (p. 362), and Sierra Leone (p. 372).
- 13 See Bevan and Dreyfus (2007, p. 296) for a breakdown of ammunition by age alongside political events in Ugandan history (Figure 9.4). See also Bevan (2008b) for an assessment of the distribution and impact of armed violence in Karamoja.
- 14 UN daily, weekly, and monthly security summaries kindly provided by the UN Field Security Office, Gulu.
- 15 Expenditure is a relative concept, and it is worth noting that some states have minimal budgets for enhancing the security of national stockpiles. A growing number of stockpile assistance programmes, however, offer technical assessments of security requirements and can provide states with advice concerning potential donors for security enhancements.
- 16 See, for instance, the case of a Dallas police officer whose 9 mm pistol and 46 rounds of ammunition were stolen after he had left his gun belt on the seat of his vehicle while playing basketball (Eiserer, 2007).
- 17 See, for instance, Klein and Dvorak (2006) for a reported theft from a desk within a police station. The gun was later used in at least three shooting incidents and a robbery.
- 18 Field research conducted by James Bevan in Kenya, Sudan, and Uganda, 2005–07.
- 19 Report of a Ukrainian state-instigated investigation cited in Kuzio (2002). See also JIG (2002) and interviews conducted with Ukrainian officials at the Ministry of Foreign Affairs, with former government officials at the Ministry of Economy by International Alert (von Tangen Page, Godnick, and Vivekananda, 2005).
- 20 These logistical reasons stem from economies of scale in which it is more effective for the branch of the armed forces that uses the majority of a particular type of weapon to assume responsibility for managing all stocks of that system in the national stockpile.

- 21 See, for instance, analysis of the role of state-armed militias in the collapse of the Somali state by Clapham (2007, pp. 231) and Compagnon (1998, pp. 76–77).
- 22 See, for example, UNICEF and Guinean government programme to disarm, demobilize, and reintegrate members of the Guinean government-supported 'Young Volunteers' militia (Florquin and Berman, 2005, pp. 280–81).
- 23 Trinitrotoluene.
- 24 Cyclotrimethylenetrinitramine.
- 25 These countries were Australia, Canada, England and Wales, Finland, Norway, Philippines, South Africa, Spain, Sweden, and the United States. See table on page 63 of Karp (2004).
- 26 It is important not to overlook theft from homes that is not associated with burglaries. One of the best-publicized examples has been the use of diverted arms and ammunition in school-related shooting incidents in the United States. Between 1992 and 1999, for instance, around 37.5 per cent of firearms used in school-related shootings that resulted in homicide involved weapons that had been sourced from the home of the perpetrator (Reza et al., 2003, p. 1626). Available evidence suggests that many juveniles had access to arms and ammunition because of poor domestic security.
- 27 Mean average of shotgun, rifle, and handgun thefts for the years 1986–2005. Data from UKHO (2000; 2001; 2003; 2004; 2005; 2006; 2007).
- 28 UKHO (2000; 2001; 2003; 2004; 2005; 2006; 2007).
- 29 The Act did not ban muzzle-loading guns, pistols produced before 1917, or pistols of historical or aesthetic interest.
- 30 Normative changes in the way British society views firearms in the aftermath of the March 1996 Dunblane shooting are difficult to assess, but cannot be ignored as another potential source of reduced firearm theft. It is quite plausible that many firearm-owning residents began increasingly to view firearms as dangerous and either disposed of them or took steps to ensure that they were better secured, regardless of national regulations or police policies. Either course of action could have an impact on gun theft rates.
- 31 Thefts: UKHO (2000; 2001; 2003; 2004; 2005; 2006; 2007). Firearm inventory estimate: correspondence with Aaron Karp. The figure 1,179,056 is an estimate used to generate findings for the Small Arms Survey (2006, pp. 37–63).
- 32 Thefts: UKHO, (2000; 2001; 2003; 2004; 2005; 2006; 2007). Firearm inventory estimate: Small Arms Survey (2004, p. 63). Firearm inventory refers to pre-1997 Act numbers (1996) and probably overestimates civilian holdings.

BIBLIOGRAPHY

- ABC (Australian Broadcasting Corporation). 2007. 'Qld Police Investigate Gun Store Robbery.' Sydney: ABC. 23 September.
<<http://www.abc.net.au/news/stories/2007/09/23/2040972.htm?section=Justin>>
- AAP (Australian Associated Press). 2007. 'NSW: Army Captain is Behind Rocket Launcher Thefts.' AAP Newsfeed. Sydney: AAP. 5 April.
- Alpers, Philip. 2005. *Gun-running in Papua New Guinea: From Arrows to Assault Weapons in the Southern Highlands*. Small Arms Survey Special Report No. 5. Geneva: Small Arms Survey. June.
- Anders, Holger. 2006. 'Following the Lethal Trail: Identifying Sources of Illicit Ammunition.' In Pézard, Stéphanie and Holger Anders. *Targeting Ammunition: A Primer*. Geneva: Small Arms Survey, pp.207–28.
- AP (Associated Press). 2005. 'Seattle, Washington Police Chief's Gun Stolen in Car Prowl.' New York: Associated Press. 4 January.
<[http://www.officer.com/web/online/Top-News-Stories/Seattle-Washington-Police-Chiefs-Gun-Stolen-in-Car-Prowl/1\\$19938](http://www.officer.com/web/online/Top-News-Stories/Seattle-Washington-Police-Chiefs-Gun-Stolen-in-Car-Prowl/1$19938)>
- BBC (British Broadcasting Corporation). 2002. 'Israeli Soldiers "Sold Arms to Militants".' London: BBC. 18 July.
<http://news.bbc.co.uk/2/hi/middle_east/2136798.stm>
- . 2007. 'Indonesia Shuts Border after East Timor Rebels Seize Arms.' BBC Monitoring Asia Pacific–Political. London: BBC. 26 February.
- Bevan, James. 2004. 'Big Issue, Big Problem? MANPADS.' In Small Arms Survey. *Small Arms Survey 2004: Rights at Risk*. Oxford: Oxford University Press, pp. 77–98.
- . 2005. 'Violent Exchanges: The Use of Small Arms in Conflict.' In Small Arms Survey. *Small Arms Survey 2005: Weapons at War*. Oxford: Oxford University Press, pp. 179–203.
- , ed. 2008a. *Conventional Ammunition in Surplus: A Reference Guide*. Geneva: Small Arms Survey.
- . 2008b. *Crisis in Karamoja: Armed Violence and the Failure of Disarmament in Uganda's Most Deprived Region*. Occasional Paper. Geneva: Small Arms Survey.
- and Pablo Dreyfus. 2007. 'Enemy Within: Ammunition Diversion in Uganda and Brazil.' In Small Arms Survey. *Small Arms Survey 2007: Guns and the City*. Cambridge: Cambridge University Press, pp. 289–315.

- . 2008. 'Small Arms Ammunition Lot Marking.' In Bevan, James, ed. *Conventional Ammunition in Surplus: A Reference Guide*. Geneva: Small Arms Survey.
- Blenkin, Max. 2007. 'Defence Moves to Tighten Weapons Security.' Canberra: Australian Associated Press. 25 September.
- Braithwaite, David and Dylan Welch with Deborah Snow, John Garnaut, and Les Kennedy. 2007. 'Rocket Launchers "Stolen for Gangs"; Officer and Ex-Soldier Face Charges.' *The Age* (Melbourne). 6 April.
- Busza, Eva. 1999. 'From Decline to Disintegration: The Russian Military Meets the Millennium.' *Demokratizatsiya: The Journal of Post-Soviet Democratization*, Vol. 7, No. 4, pp. 561–72.
- Capie, David. 2003. *Under the Gun: The Small Arms Challenge in the Pacific*. Wellington: Victoria University Press.
- Chivers, Christopher. 2005. 'At Least 85 Slain as Rebels Attack in South Russia.' *New York Times*. 14 October.
- Clapham, Christopher. 2007. 'African Guerrillas Revisited.' In Boås, Morten and Kevin Dunn, eds. *African Guerrillas: Raging Against the Machine*. Boulder: Lynne Rienner, pp. 221–33.
- Compagnon, Daniel. 1998. 'Somali Armed Units: The Interplay of Political Entrepreneurship and Clan-Based Factions.' In Clapham, Christopher, ed. *African Guerrillas*. Oxford: James Currey, pp. 73–90.
- Curtis, Henry. 2007. '3 Men Arrested after 16 Guns Found from Orange City Theft.' *Orlando Sentinel*. 23 October.
- DHS (Department of Homeland Security). 2005. 'Awareness Level WMD Training: Explosive Devices.' Washington, DC: Department of Homeland Security, Office for Domestic Preparedness. 9 June. <<http://cryptome.org/ieds.pdf>>
- Dowdney, Luke. 2003. *Children of the Drug Trade: A Case Study of Children in Organized Armed Violence in Rio de Janeiro*. Rio de Janeiro: 7 Letras.
- Eiserer, Tanya. 2007. 'Police: Gun Belt Stolen from Car while Officer Played Basketball.' *Dallas Morning News*. 22 May. <http://www.dallasnews.com/sharedcontent/dws/dn/latestnews/stories/DN-officer_22met.ART.State.Edition2.438d634.html>
- Florquin, Nicolas and Eric Berman, eds. 2005. *Armed and Aimless: Armed Groups, Guns, and Human Security in the ECOWAS Region*. Geneva: Small Arms Survey.
- Florquin, Nicolas and Stéphanie Pézard. 2005. 'Insurgency, Disarmament, and Insecurity in Northern Mali, 1990–2004.' In Florquin, Nicolas and Eric Berman, eds. *Armed and Aimless: Armed Groups, Guns, and Human Security in the ECOWAS Region*. Geneva: Small Arms Survey, pp. 46–73.
- Glatz, Anne-Kathrin and Lora Lumpe. 2007. 'Probing the Grey Area: Irresponsible Small Arms Transfers.' In *Small Arms Survey 2007: Guns and the City*. Cambridge: Cambridge University Press, pp. 73–115.
- Golik, Piotr. 1999. 'Arms Theft: Missing Missiles.' *Warsaw Voice*. 11 October.
- Greenberg, Joel. 2002. 'Shock at Charges Arabs were Sold Israeli Munitions.' *New York Times*. 19 July.
- Humphreys, Macartan and Habaye ag Mohamed. 2003. 'Senegal and Mali.' Paper presented at the 'Civil Conflict Workshop' organized by the World Bank and the International Peace Research Institutes, Oslo (PRIO). <<http://www.columbia.edu/~mh2245/papers/hm2005.pdf>>
- JIG (Jane's Intelligence Group). 1997. 'Russia Details Illegal Deliveries to Armenia.' *Jane's Defence Weekly*, Vol. 27, Issue 15. Coulsdon: Jane's Information Group. 16 April.
- . 2000. 'Clandestine Trade in Arms: A Matter of Ways and Means.' *Jane's Intelligence Review*, Vol. 12, Issue 5. Coulsdon: Jane's Intelligence Group. 1 May.
- . 2002. 'Ukraine: An Inside Report (Part 3).' *Jane's Intelligence Digest*. Coulsdon: Jane's Intelligence Group. 27 September.
- . 2005. 'Dealing with the Russian "Arsenal of anarchy".' *Jane's Intelligence Review*. Coulsdon: Jane's Intelligence Group. 1 February.
- . 2007a. 'Small-Arms, Big Problem – Light Weapons Trafficking in Albania.' *Jane's Intelligence Review*. Coulsdon: Jane's Intelligence Group. 1 October.
- . 2007b. 'Peacekeepers Killed as Guerrillas Attack AMIS Base in Darfur.' *Jane's Defence Weekly*. Coulsdon: Jane's Intelligence Group. 10 October.
- . 2007c. 'FARC Rearms from Peru, Eyes Venezuela.' *Jane's Terrorism & Security Monitor*. Coulsdon: Jane's Intelligence Group. 10 October.
- Karp, Aaron. 2004. 'From Chaos to Coherence: Global Firearm Stockpiles.' In *Small Arms Survey. Small Arms Survey 2004: Rights at Risk*. Oxford: Oxford University Press, pp. 43–76.
- . 2007. 'Completing the Count: Civilian Firearms.' In *Small Arms Survey. Small Arms Survey 2007: Guns and the City*. Cambridge: Cambridge University Press, pp. 39–71.
- Klein, Allison and Petula Dvorak. 2006. 'Gun Stolen From D.C. Officer Used In Crimes.' *Washington Post*. 7 July. <<http://www.washingtonpost.com/wp-dyn/content/article/2006/07/06/AR2006070601614.html>>
- Klingelhoef, Mark. 2005. *Captured Enemy Ammunition in Operation Iraqi Freedom and Its Strategic Importance in Post-conflict Operations*. Carlisle Barracks, Pennsylvania: US Army War College, Strategy Research Project. 18 March. <<http://www.strategicstudiesinstitute.army.mil/pdffiles/ksil72.pdf>>
- Kuzio, Taras. 2002. 'Ukraine's Decade-long Illegal Trade in Arms.' *RFE/RL Crime, Corruption, and Terrorism Watch*, Vol. 2, No. 1. 10 January. <<http://www.nisat.org/default.asp?page=/search.asp>>

- LeBrun, Emile. 2007. *Recent Innovative Approaches to Preventing Criminal Access to Firearms in the United States*. Background paper. Geneva: Small Arms Survey. October.
- Metropolitan Police. 2007. 'Firearms Enquiries: Security.' London: Metropolitan Police. <<http://www.met.police.uk/firearms-enquiries/security.htm>>
- Mkutu, Kennedy. 2007a. 'Impact of Small Arms Insecurity on the Public Health of Pastoralists in the Kenya–Uganda Border Regions.' *Crime, Law and Social Change*, Vol. 47, No. 1. February, pp. 33–56.
- . 2007b. 'Small Arms and Light Weapons Among Pastoral Groups in the Kenya-Uganda Border Area.' *African Affairs*, Vol. 106, No. 422. January, pp. 47–70.
- Moreman, Tim. 2006. 'The Arms Trade on the N.W. Frontier of India 1890–1914.' Articles on the Indian Army. King-Emperor. <<http://www.king-emperor.com/article5-armstrade.htm>>
- Mouzos, Jenny and Yuka Sakurai. 2006. *Firearms Theft in Australia: A Six-Month Exploratory Analysis*. Technical and Background Paper No. 20. Canberra: Australian Institute of Criminology. <<http://www.aic.gov.au/publications/tbp/tbp020/tbp020.pdf>>
- Muggah, Robert. 2005. *Securing Haiti's Transition: Reviewing Human Insecurity and the Prospects for Disarmament, Demobilization, and Reintegration*. Small Arms Survey Occasional Paper No. 14 (updated). Geneva: Small Arms Survey. October.
- and James Bevan. 2004. *Reconsidering Small Arms in the Solomon Islands*. Background paper. Geneva: Small Arms Survey. October.
- Núñez, Claudia. 2007. 'México aumentará vigilancia fronteriza: El propósito es combatir el tráfico de armas que procede de EU.' *La Opinión* (Los Angeles). 9 October. <<http://www.laopinion.com/supp7/?rkey=00071008214049446122>>
- Olson, Alexandra. 2003. 'Four Soldiers Ambushed and Killed in Western Venezuela.' New York: Associated Press. 20 December.
- OSCE (Organization for Security and Cooperation in Europe). 2003a. *Handbook of Best Practices on Small Arms and Light Weapons: Best Practice Guide on National Procedures for Stockpile Management and Security*. FSC. GAL/14/03/Rev.2. Vienna: OSCE. 19 September.
- . 2003b. *OSCE Document on Stockpiles of Conventional Ammunition*. FSC.DOC/1/03. Adopted at the 40th Plenary Meeting of the OSCE Forum for Security Co-operation. Vienna: OSCE. 19 November.
- Penrose, Jane. 2005. *Rome And Her Enemies: An Empire Created And Destroyed by War*. Oxford: Osprey.
- PNB (Polish News Bulletin). 2000. 'Teenagers Reportedly Stole Missiles.' Warsaw: PNB. 15 February.
- Presidência da República do Brasil. 2000. Decreto N° 3665 de 20 de Novembro de 2000. Dá Nova Redação ao Regulamento para a Fiscalização de Protudos Controlados (R-105). Brasília: Casa Civil, Subchefia para Assuntos Jurídicos. <http://www.planalto.gov.br/ccivil_03/decreto/D3665.htm>
- . 2004. Decreto N° 5123 de 1 de Julho de 2004. Regulamenta a Lei N° 10826, de 22 de dezembro de 2003, que dispõe sobre registro, posse comercialização de armas de fogo e munição, sobre os Sistema Nacional de Armas—SINARM e define crimes. Brasília: Casa Civil, Subchefia para Assuntos Jurídicos. <http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2004/Decreto/D5123.htm>
- RAND. 2001. 'Guns in the Family: Firearm Storage Patterns in U.S. Homes with Children.' Research Highlights. RB-4535 (2001). Santa Monica: RAND Corporation. <http://www.rand.org/pubs/research_briefs/RB4535/index1.html>
- Rand, Michael. 1994. 'Guns and Crime: Handgun Victimization, Firearm Self-Defense, and Firearm Theft.' Bureau of Justice Statistics Crime Data Brief. NCJ-147003. Washington DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics. April. <<http://www.ojp.usdoj.gov/bjs/pub/ascii/hvdsdaft.txt>>
- Reza, A., et al. 2003. 'Source of Firearms Used by Students in School-Associated Violent Deaths—United States, 1992–1999.' *Journal of the American Medical Association*. Vol. 289, No. 13. 2 April, pp. 1626–27. <<http://jama.ama-assn.org/cgi/reprint/289/13/1626>>
- Roig-Franzia, Manuel. 2007. 'U.S. Guns Behind Cartel Killings in Mexico.' *Washington Post*. 29 October. <http://www.washingtonpost.com/wp-dyn/content/article/2007/10/28/AR2007102801654_pf.html>
- Schmitt, Eric and Ginger Thompson. 2007. 'Broken Supply Channel Sent Arms for Iraq Astray.' *New York Times*. 11 November.
- SEESAC (South Eastern and Eastern Europe Clearinghouse for the Control of Small Arms and Light Weapons). 2006. 'SALW Survey of Moldova.' Belgrade: SEESAC. July.
- Small Arms Survey. 2004. *Small Arms Survey 2004: Rights at Risk*. Oxford: Oxford University Press.
- Stohl, Rachel, Matt Schroeder, and Dan Smith. 2007. *The Small Arms Trade: A Beginner's Guide*. Oxford: OneWorld.
- Swanwick, Tristan. 2007. 'Crime Gang Blamed for Firearms Robbery.' *Courier Mail* (Brisbane). 25 September. <<http://www.news.com.au/story/0,23599,22473920-421,00.html>>
- TRADOC (US Army Training and Doctrine Command). 2007. *A Military Guide to Terrorism in the Twenty-First Century*. 'Appendix E (not available on Web site): Improvised Explosive Devices.' Fort Leavenworth: TRADOC Intelligence Support Activity—Threats. 15 August, pp. E1–E14. <http://www.au.af.mil/au/awc/awcgate/army/guidterr/app_e.pdf>
- Turbiville, Graham. 1995. *Mafia In Uniform: The Criminalization of the Russian Armed Forces*. Fort Leavenworth: Department of Defence, Foreign Military Studies Office. <<http://leav-www.army.mil/fmsso/documents/mafia.htm>>

- UK (United Kingdom). 1997. 'Firearms (Amendment) (No. 2) Act 1997: An Act to extend the class of prohibited weapons under the Firearms Act 1968 to include small-calibre pistols.' 27 November. <http://www.opsi.gov.uk/acts/acts1997/ukpga_19970064_en_2>
- . 2006. 'Foreign Criminals'. *United Kingdom Parliament Publications and Records*. House of Commons Hansard Written Answers. 4 September. <<http://www.publications.parliament.uk/pa/cm200506/cmhansrd/vo060904/text/60904w2277.htm>>
- UKHO (United Kingdom Home Office). 2000. *Criminal Statistics England and Wales 1999: Statistics relating to Crime and Criminal Proceedings for the year 1999*. London: Stationery Office. 8 December.
- . 2001. *Criminal Statistics England and Wales 2000: Statistics relating to Crime and Criminal Proceedings for the year 2000*. December.
- . 2003. *Crime in England and Wales 2001/2002: Supplementary Volume*. Research Development and Statistics Directorate. ISSN 1358–510X. January.
- . 2004. *Crime in England and Wales 2002/2003: Supplementary Volume 1: Homicide and Gun Crime*. National Statistics. January.
- . 2005. *Crime in England and Wales 2003/2004: Supplementary Volume 1: Homicide and Gun Crime*. National Statistics. ISSN 1358–510X. January.
- . 2006. *Violent Crime Overview, Homicide and Gun Crime 2004/2005*. National Statistics. ISSN 1358–510X. 26 January.
- . 2007. *Homicides, Firearms Offences and Intimate Violence 2005/2006*. National Statistics. ISSN 1358–510X. 25 January.
- UNSC (United Nations Security Council). 2006. 'Letter dated 15 June 2006 from the Group of Experts on the Democratic Republic of the Congo addressed to the Chairman of the Security Council Committee established pursuant to resolution 1533 (2004).' S/2006/525 of 18 July.
- UPI (United Press International). 2007. 'Fla. Gun Smuggling Linked to Burglary Ring.' Washington, DC: UPI. 20 May.
- USDoD (United States Department of Defense). 1989. *Single Manager for Conventional Ammunition (Implementing Joint Conventional Ammunition Policies and Procedures)*. DoD 5160.65-M. 'Chapter 12: Security.' Washington, DC: Department of Defense, Assistant Secretary of Defense (Production and Logistics). April.
- . 2000. 'Physical Security of Sensitive Arms, Ammunition, and Explosives.' DoD 5100.76-M. Washington, DC: Assistant Secretary of Defense for Command, Control, Communications and Intelligence. 12 August.
- . 2002. 'Marine Corps Ammunition Management and Explosives Safety Policy Manual.' MCO P8020.10A 'Chapter 4: Security and Accountability.' Washington, DC: Department of Defense, Department of the Navy, Headquarters United States Marine Corps. April.
- USGAO (United States Government Accountability Office). 2007. *Stabilizing Iraq: DOD Cannot Ensure That U.S.-Funded Equipment Has Reached Iraqi Security Forces*. GAO-07-711. Washington, DC: GAO. July. <<http://www.gao.gov/new.items/d07711.pdf>>
- von Tangen Page, Michael, William Godnick, and Janani Vivekananda. 2005. *Implementing International Small Arms Controls: Some Lessons from Eurasia, Latin America and West Africa*. 'Small Arms Control in Ukraine' (Appendix published as a CD-Rom). London: International Alert. <http://www.international-alert.org/pdfs/MISAC_UkraineStudy.pdf>
- Wilkinson, Adrian, James Bevan, and Ian Biddle. 2008. 'Improvised Explosive Devices (IEDs): An Introduction.' In Bevan, James, ed. *Conventional Ammunition in Surplus: A Reference Guide*. Geneva: Small Arms Survey.
- Zawitz, Marianne. 1995. *Guns Used in Crime*. NCJ-148201. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics. July. <<http://www.ojp.usdoj.gov/bjs/pub/pdf/guic.pdf>>

ACKNOWLEDGEMENTS

Principal author

James Bevan