



## Half a Billion and Still Counting ...

### *Global Firearms Stockpiles*

#### Introduction

One of the characteristics of the rise of international civil society is the enormous growth in the amount of previously sensitive information that is now in the public domain. In innumerable fields of public policy, information previously considered proprietary or secret must now be revealed to all. Weapons and military technology, once the ultimate area of secrecy, are not immune to this trend.

In this climate of increasing transparency, international efforts have led to increasingly accurate assessments of the scale and dimensions of the diverse range of weapons jeopardizing international peace and security. However, small arms and light weapons remain an exception to this trend, one of the last areas where policy is seriously hindered by a lack of basic information.

Although it might seem bizarre, more is known about the number of nuclear warheads, stocks of chemical weapons, and transfers of major conventional weapons than about small arms. While several countries have declared how many firearms are legally owned by their private citizens, only a handful have revealed the number of small arms and light weapons in the inventories of their police or armed forces. Moreover, there is still no systematic method of determining the number of illegally owned small arms in private hands. In lieu of systematic reports from official sources, this chapter explores the dimensions of the global small arms problem, asking:

- How many small arms and light weapons are there?
- Who owns them and where are they concentrated?
- Has the problem grown, or spun completely out of control?
- Are there some aspects that are more amenable to intervention than others?

Although there is a need to quantify all aspects of the world's small arms problem, this chapter focuses on one in particular: the global quantities and the distribution of firearms—the handguns, rifles, shotguns, and machine guns that are the most visible aspect of the small arms problem. It reviews differences in the distribution of firearms in selected countries, then estimates the global total of firearms owned by police, government armed forces, insurgencies, criminal organizations, and private owners.

New research has revealed that there are at least 550 million firearms around the world. This figure emphasizes readily identifiable military, police, and some private firearms. A comprehensive total, covering all firearms in circulation around the world—including all privately and illegally owned firearms—would be significantly greater, by tens to hundreds of millions more. It was not possible, for example, to include any information on privately owned guns thought to be in major countries like China, France, India, or Pakistan. Nor do the estimates here include illegally owned weapons. These missing categories of firearms, along with other types of small arms, will be examined in subsequent editions of the Small Arms Survey .

*There are at least 550 million known firearms around the world. If all privately and illegally owned firearms were included, the number would be significantly greater, by tens to hundreds of millions more.*

## The elusiveness of small arms data

Small arms may be the most commonly used and the most deadly of all armaments, but they have never received the degree of attention lavished upon major conventional weapons, much less weapons of mass destruction. The number of major weapon systems like armoured vehicles, aircraft, guided missiles, and naval vessels around the world is also generally well-known. With official and unofficial statistics on annual production of major weapon systems readily available from several sources, the number of strategic nuclear weapons deployed by the Russian Federation and the United States (US) has been public knowledge for almost a decade, following the signing of the first Strategic Arms Reduction Treaty (START) in 1991. Even inventories of chemical weapons have become known in recent years through the 1993 Chemical Weapons Convention.

Unfortunately, the same cannot be said of small arms. For example, the total number and global distribution of small arms remains one of the greatest enigmas in the field of international peace and security. The automatic rifle—the small arm par excellence—has been in continuous production for more than 50 years; yet there are no reliable overall statistics on global production or international transfers. Only a handful of governments have made any data available on their own procurement and transfers.

It is remarkable that the number of weapons responsible for most of the deaths and destruction in crime and conflict remain concealed, whether through official secrecy or bureaucratic neglect. To be sure, for many years now, the types of small arms and light weapons deployed by armed forces around the world—including government forces and insurgencies—have been well-known. But the numbers of automatic rifles, machine guns, mortars, grenade and rocket launchers, whether they are linked to national defence, communal conflict, policing, or other uses, remain a matter of conjecture.

The shifting tides of international priorities account for some of the shortcomings. Small arms were almost completely overlooked in Cold War discussions of peace and security so governments had little reason to gather or reveal statistics on them. Even studies of criminality tended to focus exclusively on particular aspects of small arms. More fundamental factors are also at work. Inquiries undertaken for this chapter revealed, not one big data problem, but innumerable small ones. Much of the problem is due to simple ignorance; few governments have comprehensive data on all public and official small arms available to share in the first place. In many cases, the problem is official secrecy, itself the result of habit as much as anything else. In the few cases where data are available, such as on public firearms ownership, no effort has been made to combine the many categories of ownership to arrive at a total figure.

This chapter demonstrates that the scope and contours of small arms proliferation can be established. However, the quantification problem will not be solved easily, what with small arms and light weapons in the hands of some two hundred governments, hundreds of insurgencies, and thousands of organized criminal groups, as well as hundreds of millions of individual owners. To keep the problem to manageable proportions, this chapter focuses exclusively on the number of firearms existing in the world today. It emphasizes weapons like rifles and carbines, revolvers and pistols, shotguns and machine guns—in part because they are the most ubiquitous of all small arms. Their distribution is also easier to trace, following a common set of rules to make it easier to estimate. Subsequent editions of the Survey will devote greater attention to the global diffusion and inventories of other small arms and light weapons like grenades and grenade launchers, mortars, and rocket launchers.

### *The need for comprehensive numbers*

Confronted by a crippling paucity of reliable data, analysis, and policy-making on small arms diffusion have, of necessity, relied instead on reasoning, historic examples, and anecdotal evidence.

*The total number and global distribution of small arms remains one of the greatest enigmas in the field of international peace and security.*

While examples of individual small arms transfers are legion, thorough case studies of such transfers in the course of a single conflict are few and incomplete.<sup>1</sup> Nevertheless, many of these examples are highly illuminating and suggestive, illustrating the ways small arms spread around the world and the kinds of processes involved. As these insights accumulate, a broader and more nuanced image of the nature of the global small arms problem is emerging.

The lack of systematic and fully reliable data on the number and global distribution of firearms does not prevent incisive research, nor should it inhibit policy-making. But whether such methods will enable those concerned to accumulate enough information to create a comprehensive, overall picture of what is going on and what most needs to be done is more elusive. We have a growing wealth of ideas and experience, but little basis for sound judgment.

This tension makes it increasingly difficult to determine when to act and when not to, which problems are readily solvable, which will require long-term efforts, and which solution is appropriate to which problem (see Box 2.1). In other words, while we are rapidly becoming experts on specific trees, the forest remains more of a mystery.

Comprehensive or aggregate figures will help define and shape the future of small arms policy and studies. They will clarify the scale of the problem, guide analysis and policy-making, and focus public interest. Not only will such figures provide an impression of the nature of the phenomenon; they will also contribute to the way it evolves. They can help identify where the dangers are greatest and where most discrete. Such perceptions will contribute to decisions among policy-makers and analysts on whether to deal with the problem through universal principles and global approaches, or through approaches tailored to specific regions and types of problems.



#### Box 2.1 Specific reasons for addressing small arms data problems

1. **Scientific value:** Accurate numbers have an intrinsic scientific value, establishing standards of measurement and evaluation and benchmarks for measuring future progress.
2. **Systematic study:** A firm evidence base permits systematic study of trends in small arms issues over time.
3. **Comparative assessment:** Data collection paves the way for comparative assessment between the scale of the problem in different regions and situations, as well as between various cases over time.
4. **Influence on attitudes and choices:** In small arms, as in all areas of public policy, perceptions of the scale of the problem will influence attitudes and choices about what to do.
5. **Catalyzation of interest:** Tangible figures will catalyze interest, giving even those with only a marginal or passing interest in the problem of small arms proliferation deeper insight into the challenge before us.

#### *The data void*

The small arms issue is not new. Antecedents to current studies date back to the late 1970s when researchers first endeavoured to develop data for the international trade in small arms, aspiring—unsuccessfully—to create insights comparable in strength and utility to the readily available data on the trade in major weapons systems. Despite the expenditure of considerable energy, the small arms field still is a unique kind of terra incognita. Compared to the sophistication of quantitative information available in closely related fields, information about international small arms proliferation remains statistically primitive and underdeveloped. There are no small arms counterparts to the Stockholm International Peace Research Institute (SIPRI) Arms Trade Data Base, the United Nations Arms Register, the reports filed under the Treaty on Conventional Forces in Europe,

or the Chemical Weapons Convention. There is no regular information to explain how global production of firearms fluctuates from year to year. There are few reports on the numbers acquired by major buyers. While there are statistics on some aspects of purchases by private buyers, there are no published statistics on the quantities of small arms and light weapons in military and police arsenals.

Although officials in many countries maintain that their governments keep excellent records on particular aspects of small arms within their territories, this information is rarely, if ever, released publicly. In no international aspect of this phenomenon is there reliable quantification. As a prominent United Nations study noted a few years ago, 'Quantifying the illicit trade in small arms and light weapons is difficult, because the activity is by nature clandestine and outside the law. In addition, while various reporting mechanisms have been established with respect to the legal trade of major conventional weapons...no such mechanisms have been created which cover the legal trade in small arms.'<sup>2</sup>

To date, the only general estimate of the global spread of firearms originated with the Indian defence expert, Jasjit Singh, who wrote in 1995 that 'another dimension [of the problem of small arms and light weapons] is the phenomenal spread of guns, 500 million of which are in circulation in the world...'<sup>3</sup>This was a personal conjecture, but a reasonable one.<sup>4</sup> Even so, the exact meaning of this statement has provoked debate. Another Indian analyst, for example, maintains that the figure refers, not to all firearms, but is meant more narrowly, pointing out that there are 'over 500 million Kalashnikovs estimated to be in circulation around the world.'<sup>5</sup> Contributing to the confusion, the 1999 Report of the Secretary-General interpreted the same figure to mean not just guns, but all small arms, stating that 'Globally, it has been estimated that more than 500 million small arms and light weapons are in existence,' apparently combining weapons like mortars and rocket launchers in the total.<sup>6</sup>

Despite its status as the ubiquitous symbol of post-Cold War conflict, even the automatic rifle is veiled in statistical secrecy. The most influential estimate came from the late firearms expert, Edward Ezell, and was based on his study of the AK-47. Since its designer, Mikhail Kalashnikov himself, had no idea how many copies of his famous rifle had been manufactured, Ezell was forced to arrive at an estimate using a surrogate indicator. His assessment was arrived at by comparing the size of armies known to use the weapon.<sup>7</sup> Applying a sense of dimension developed through a lifetime of professional study, Ezell extrapolated this example to other major families of automatic rifles. In each case, he relied largely on the size of the armies deploying each weapon, creating figures later updated by his wife, the firearms expert, Virginia Ezell.<sup>8</sup> This led to an estimate of global production of major types of automatic rifles during the years 1945-90, which ranged from 55 to 72 million such weapons (see Table 2.1). Even this figure appears to be conservative. Its author recently offered a significantly higher figure of up to 100 million AK-47s alone (Ezell, 2000).

This estimate, too, has won wide acceptance, including in United Nations studies, albeit mostly for want of any alternative.<sup>9</sup> The limited information available about production of other types of automatic rifles is enough to show that these estimates were far from complete.

Both the estimate of 500 million guns and 55 to 72 million automatic rifles have served as benchmarks in the field for a long time. Yet, both are no more than informal estimates; their exact meaning is ambiguous, and they appear to be based on professional guesswork. Current data suggest that approximately 90 to 122 million modern military rifles have been produced (see Table 2.1). Other figures in routine use are less plausible. The most dubious are the incredibly large figures that regularly appear in the media, exaggerating the number of firearms in a particular country or region. For example, it has been reported that Mozambique alone has six million or more AK-47s, which would be roughly half the number thought to be in all of the Russian Federation (see Box 2.2).

*The estimate of 500 million guns and 55 to 72 million automatic rifles have served as benchmarks in the field for a long time.*

Table 2.1 Global production of major assault rifles

Original Designation	First Service	Other Versions	Total Production (1995)	Prominent Users
AK-47/74	1947	M-62, M-76, Type-56, Type-68	70-100 million	Russia, China, Vietnam, Poland
M-16	1962	C-7, Type-65	>7 million	US, Canada, South Korea, Philippines
G-3	1959	G-36	>7 million	Germany, Sweden, Angola, Mexico
FAL		L1A1	5-7 million	Belgium, UK, Argentina, India
AR70	1968	AR70/223		Italy, Jordan, Malaysia
FAMAS F-1		FAMAS G2	>400,000	France
Galil			>500,000	Colombia, Israel, South Africa
L85A1	1986		323,920	UK, Jamaica
SAR 80	1978			Singapore
SIG540	1984	SIG 550-552		Switzerland
AUG	1978			Austria, Australia
<b>Total</b>			<b>90-122 million</b>	

Sources: Ezell, 2000 and Gander, 2000.

Today it is widely recognized that Afghanistan is the world's leading center for unaccounted weapons, with at least 10 million in circulation within the country.<sup>10</sup> The Afghan war against the Soviet Union was long and brutal, as was the civil war that followed. Even so, it is not easy to reconcile such an estimate with a total population of only about seven million Afghani men aged 18 to 52, especially considering that this figure also includes millions of Afghani men still living in Iran and Pakistan.

In the most extreme example of all, in early 2000 it was widely reported that the people of Yemen owned an estimated 60 million guns, most of them Kalashnikovs, and virtually all of them in civilian hands.<sup>11</sup> This would be more than seven weapons for every Yemeni male, whether infant, adult, or elderly. While no one questions that all of these countries suffer from cultures of violence and excessive firearms ownership, such figures probably obscure more than they clarify. Exaggerated figures are also counter-productive, in that they discourage taking action to address the problems that actually may be more readily dealt with than such inflated numbers suggest.

### Box 2.2 Mozambique's dangerous numbers

A poignant example of the scale and seriousness of the data problem was illustrated by Mozambique in the early 1990s, where uncertainty about the number of small arms in the country after the long civil war probably inhibited and/or undermined disarmament initiatives. Although this war was fought by a government with traditional Cold War suppliers against an insurgency that was also dependent on foreign sponsorship, there is no consensus on how many small arms seeped into the country during some 20 years of fighting.

When the Portuguese left Mozambique in 1974, they took their equipment with them, leaving the country with the modest military capabilities inherited from a revolutionary war that never involved more than 10,000 Frente de Libertação de Moçambique (FRELIMO) independence fighters.<sup>12</sup> Only after independence, as fighting gradually intensified against Resistência Nacional Moçambicana (RENAMO) rebels sponsored by South Africa, did arms acquisitions become steadier.

How much equipment was imported? According to accepted estimates, the troops on both sides never numbered more than 92,000 altogether. Even allowing for considerable wastage, it is unlikely that their combined small arms requirements rose to more than a half a million firearms; even that is feasible only if the vast majority were lost or permanently broken.

Only after the war ended in 1992-93 was there serious interest in the weapons left over. Ironically, it was South Africa that tried hardest to determine the number of small arms that reached Mozambique during its civil war, motivated by concerns that unlicensed weapons were pouring across their shared border. With violent crime reaching crisis proportions, and thousands of former Mozambican weapons ending up in the hands of the South African police, they needed to gauge the potential seriousness of the problem. Thus, South Africa began to develop a special interest in small arms proliferation.

In lieu of reliable figures, estimates quickly ballooned due to inflation. According to the first reports in 1993, during the course of the war, the Mozambique Government handed out 1.5 million AK-47s to civilian self-defence organizations. At a 1994 Interpol conference, one presentation asserted that 1.5 million AK-47s came from the Soviet Union alone.<sup>13</sup> A 1995 press report estimated there were six million AK-47s left in the post-war country.<sup>14</sup> Subsequent analysis increased these estimates to 10 million weapons.<sup>15</sup>

However, the entire population of Mozambique was no more than 16 million when the fighting ended. Only some 2.7 million were men of typical military age (18 to 37 years old), and many of them were among the refugees forced to flee the country.<sup>16</sup> That between two and five automatic rifles were distributed to each and every one strains credulity. Even the Provincial Militia—for whom the reported 1.5 million rifles were supposedly intended—was expected to reach only 300,000 in number and there is no evidence that this goal was actually achieved.<sup>17</sup> Upon reconsideration, at least one analyst revised his estimate of AK-47 imports down to between 500,000 and one million weapons.<sup>18</sup>

One effect of this exaggeration was to trivialize disarmament efforts. Why collect a few hundred thousand firearms when millions more remained at large? These perceptions were exacerbated by tales of automatic rifles being traded in Mozambique for the equivalent of US\$ 15 and in nearby Swaziland for US\$ 6.<sup>19</sup> South African black marketeers were quoted as complaining that they could not get rid of the things at a profitable price.<sup>20</sup>

In retrospect, it appears that the United Nations (UN) probably collected an unprecedentedly high proportion of the small arms belonging to the 91,570 uniformed troops when both sides demobilized. The rival armies turned in a combined total of roughly 168,000 firearms.<sup>21</sup> Under the likely misapprehension that they had collected only a small share of the huge Mozambican national arsenal, officials had no incentive to destroy these weapons. The widespread trading in excess weapons—and the flow of large numbers of them to criminals in South Africa—began only when these reclaimed guns were later dumped on the market.

### Five categories of firearms

Although general estimates are useful for drawing attention to the global spread of small arms and light weapons, careful analysis can do much better, especially when it comes to the extremely important role of firearms. Ideally, figures should come from manufacturers, governments, and buyers. However, until that becomes possible, much can be determined through careful use of published reports, extrapolation from selected examples, and formal modelling.

The rest of this chapter carefully examines the kinds of information available about particular categories of firearms to arrive at more useful cumulative estimates. The task has been divided into five categories, based on firearms ownership. These are:

1. Police firearms
2. Government armed forces firearms
3. Insurgent and other non-state actor firearms
4. Private legal firearms
5. Private illegal firearms

Each category harbours unique statistical problems requiring equally unique solutions. For example, the kinds of information provided on government armed forces' firearms are very different from the data available on privately licensed weapons. The analytical procedures required to fill in the gaps are different as well. In the long run, this means that different kinds of data reporting will be needed to establish how guns are distributed. In the short run, there is no alternative to distinctive estimating procedures, each tailored to the special characteristics of each major category.

Three important areas excluded from this assessment should be acknowledged at the start. First, it has not been possible to assess manufacturers' stocks or the inventories of brokers and dealers. Second, obsolete weapons—such as old revolvers, semi-automatic, or bolt-action military rifles—still in military storage—are not systematically included. And third, it is currently not feasible to produce systematic estimates of the number of illegally held private weapons.

### The distribution of firearms ownership

Although the proliferation of firearms is a global phenomenon, their distribution varies dramatically from region to region, and country to country. Countries like Colombia, El Salvador, Israel, Switzerland, the United States, and Yemen have well-deserved reputations for widespread gun ownership, while other countries like Japan and the United Kingdom are equally well-known for their scarcity of firearms. Going beyond these clichés to establishing just how many guns they have is actually another matter entirely.

None of the countries consulted or studied by the Survey report systematically on their total number of firearms. Typically, no more than one or two categories—if any—are known; others must be estimated. In lieu of a systematic list of countries and their firearms inventories, it is revealing to examine some of the handful of countries—the US, New Zealand, Argentina, and the United Kingdom—for which reasonably complete firearms statistics are available. By combining data from gun registration, official inventories, public surveys, and official statements, a useful portrait begins to emerge. To be sure, these four countries may not be highly representative of global firearms ownership, but they do illuminate an impressive range of variations. [The data in this section (pp. 9-12) are taken from the material analyzed in the following section of this chapter].

With a total of at least 230 million firearms, the US has the world's largest known arsenal of firearms, constituting almost half of all known firearms in the world. This amounts to approximately 84 guns for every 100 people. A precise figure is impossible to calculate since there is no central gun



*With a total of at least 230 million firearms—84 guns for every 100 people—the United States has the world's largest known arsenal of firearms, constituting almost half of all known firearms in the world.*

*The total quantity of civilian firearms in the United States is comparable to—or even greater than—the total firearms of all the armed forces in the entire world.*

registry in the US; weapons can be owned legally without being registered. Indeed, most civilian firearms in the US are not licensed or registered and thus can be estimated only through public surveys. Nor are police weapons centrally tracked; although they are usually registered, this is done locally, without reporting to the federal government. Even the United States' armed forces do not make their total firearms inventories public. Although they attempt to keep extremely precise records of each and every gun under their control, most of their five armed services do not reveal the details of their records. However, this is beginning to change.

Instead of relying on official data, a picture of gun ownership in the US has to be assembled bit by bit. Using sources discussed later in this chapter—including published surveys of public gun ownership, police firearms inventories, and figures released by the US Army—a broad picture of the distribution of the roughly 230 million firearms in the US emerges (see Fig. 2.1).

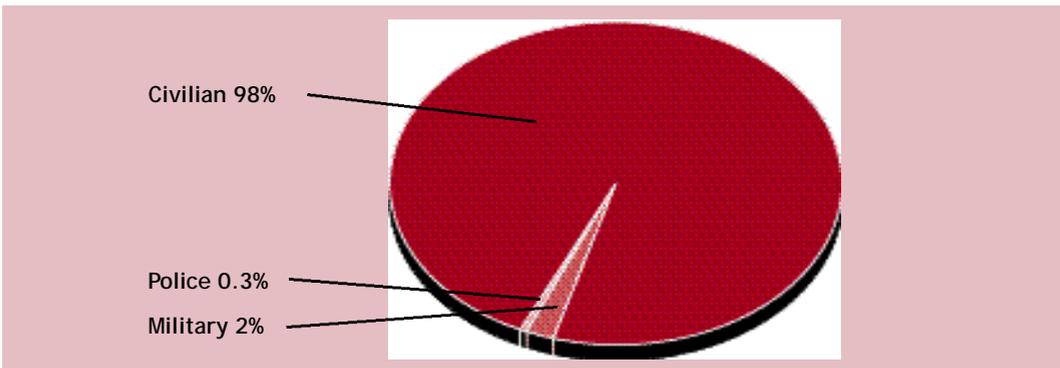
This assessment reveals that gun ownership in the United States is overwhelmingly a civilian matter, with some 98 per cent of all firearms in private hands. In contrast to many countries, where illegal gun ownership is a serious problem, this is not the case in the US; since it does not register or license most guns, virtually all are fully legal. The significant exception comprises weapons that have been stolen from their original owners.

The US armed forces own only approximately two per cent of the country's firearms, and the police roughly one-third of one per cent. The US public not only owns far more firearms than their armed forces, as shown below, but the total quantity of civilian firearms in the United States is comparable or even greater than the total firearms of all the armed forces in the entire world. In addition to owning the vast majority of United States' firearms, its citizens are also better armed in terms of quality than many official agencies. For example, while the public owns a large proportion of rifles (including military-style automatic and semi-automatic rifles) and shotguns, the overwhelming majority of police weapons are mere pistols. Despite florid language from some activists, in the US it is far and away the public that dominates the tools of violence; the government is a small player by comparison.

Nor is the United States alone in this regard. Although few countries come close to the US in the total number of their firearms, the tendency for civilian ownership to overwhelm official stocks seems to be the norm. A few other countries—such as Switzerland and Yemen, and possibly Belgium and Israel—may match or approach the United States' rate of gun ownership, but they appear to be exceptional.

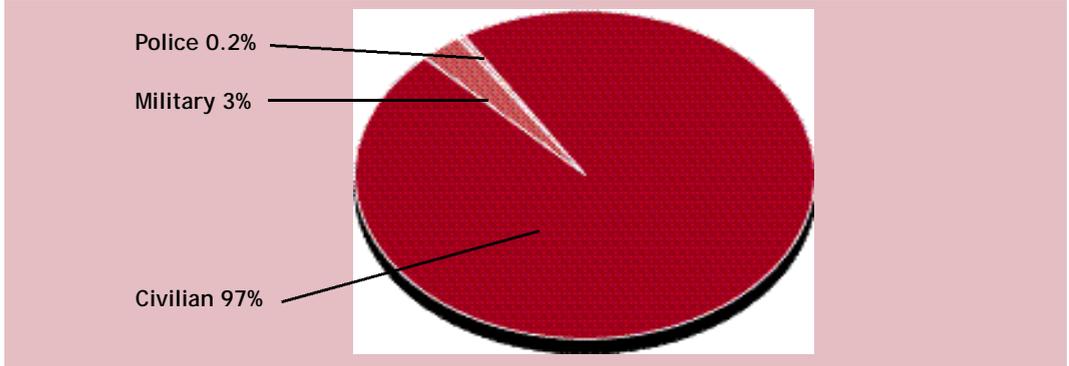
More typical of many wealthy societies is New Zealand, with approximately 25 firearms for every 100 people, virtually all in private hands (see Figure 2.2). Canada also has a very similar pattern of gun ownership, with some 25 firearms for every 100 people as well. Although comprehensive data are

Figure 2.1 Firearms in the United States, 2001



missing, the same proportion appears to hold for countries like Germany, France, and Sweden, with roughly one gun for every four people and civilian guns outnumbering military and police weapons by large proportions. This same general trend appears to hold even for some poorer countries like Colombia or South Africa.

Figure 2.2 Firearms in New Zealand, 2001

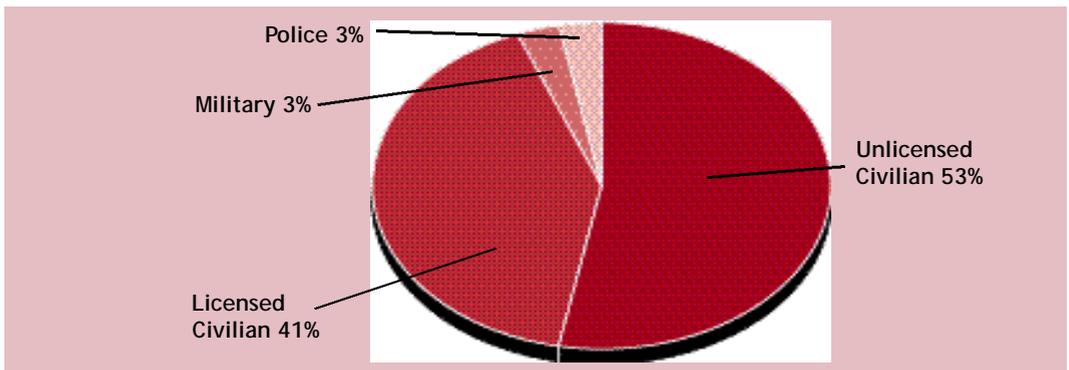


Another group of countries is exemplified by Argentina, where firearms ownership is neither rare nor atypical, even in rural areas. In Argentina, there are roughly 14 firearms for every 100 people. Since gun-owners in even moderately wealthy societies often have two or three firearms (typically a rifle, a shotgun, and a handgun), the proportion of individuals and households with a gun probably is significantly lower, on the order of one in 10 or even less. This appears normal for moderately wealthy and poorer countries with large urban populations. Many other countries of Latin America, as well as Eastern Europe, the Russian Federation, and other former Soviet states appear to fall into this category.

In Argentina (as illustrated in Figure 2.3) this means that, while the overall proportion of people owning guns is lower than countries like the United States or New Zealand, civilians still own far and away most of the country's guns. The figures on Argentina also illustrate an important nuance: the extent of illegal as opposed to legal gun ownership. As a country requiring guns to be licensed, Argentina has a large proportion of firearms outside legal ownership. The numbers estimated here are based on public surveys.

Finally, there are those countries where public gun ownership is considered unusual, with the United Kingdom (UK) as a prominent example. Even though guns are uncommon there, and

Figure 2.3 Firearms in Argentina, 2001

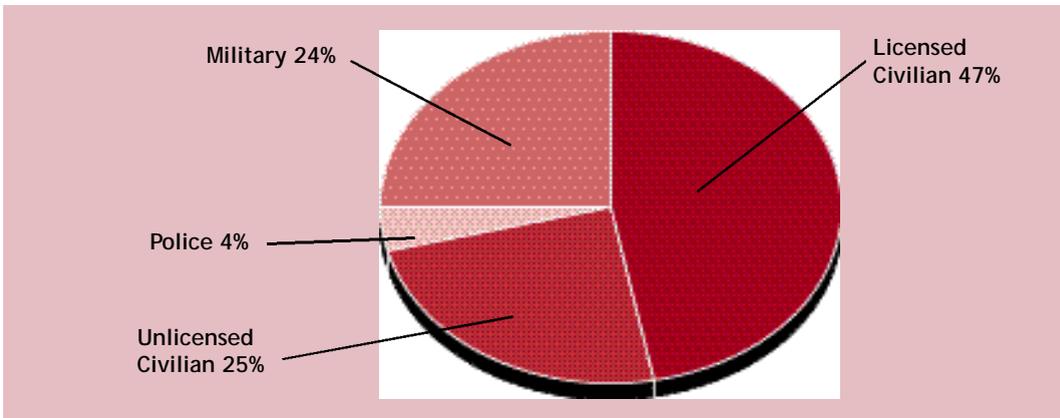


*The United Kingdom has by far the largest share of guns in military and police hands—roughly 28 per cent of its total national stockpile. Even so, official guns are massively outnumbered by those in civilian possession.*

many regional constabularies still send their police officers on patrol unarmed, there is more myth than truth to the image of an unarmed United Kingdom. With approximately six firearms—largely shotguns and single-shot rifles—for every 100 people nationally, the rural areas of the UK are reportedly especially well-armed. However, since there are fewer guns in absolute terms, the relative proportion of those that are unregistered and illegally owned is more important than in many other countries (see Figure 2.4). The figure of 25 per cent illegally owned firearms is widely accepted but, given the comparatively smaller total of firearms overall, it could well be greater. Similar proportions probably apply to countries like Japan and perhaps even China as well.

Another tendency illustrated by the United Kingdom is the inverse relationship between civilian and official firearms. Of all the countries reviewed here, the UK has by far the largest share of guns in military and police hands, roughly 28 per cent of its total national stockpile. Revealingly, however, even in such a modestly armed country like the UK, official guns are massively outnumbered by those in civilian possession. Centuries of orthodox assumptions and conventional wisdom about the well-armed state appear to be in need of reconsideration. It is not states, but societies that are well-armed.

Figure 2.4 Firearms in the United Kingdom, 2001



### Police weapons

Ironically, those small arms most often seen by the largest number of people in the world are also those that are least numerous and probably least dangerous. Small arms proliferation is dominated by the chaos and destruction caused by the weapons of petty criminals and organized crime, insurgents and rebels, as well as repressive governments. However, in times of peace, most people probably never come closer to a firearm than an occasional glance at the handle of one sticking out of a police officer's holster.

The problem of determining the number of firearms under police control arises from the secrecy natural to most police departments. They have ample reason to suppress public awareness of their weapons inventories. In countries with relatively widespread public gun ownership—such as Brazil, the Russian Federation, or the United States—the police may not want potential criminals, especially organized crime or terrorists, to know how little they have. In societies where public gun ownership is unusual—such as Japan or the UK—police authorities are more sensitive to media scandals created by the image of ‘killer cops’.<sup>22</sup> Like other armed authorities, police apparently tend to believe that too much transparency about their firearms arsenals will not necessarily make their job of law enforcement any easier—on the contrary—and are thus resistant to sharing details.

Since they cannot be ascertained through official sources, police firearms have to be estimated. This draws the focus to a major theme throughout this chapter: the overwhelming importance of people in estimating numbers of small arms. Although little may be known about the number of firearms, much more is known about the number of people who carry them. Since the guns cannot be counted, the next best thing is counting the people and multiplying the result by the number of firearms believed to be available to each of them. For police officers, the number usually appears to be relatively low, averaging between one and two weapons per person. As will be shown, however, for government armed forces, it can be as high as four to five per soldier. And for large groups of private owners, it may be ten guns per person or more.

US police firearms policy is illustrative. Although every police department in the highly decentralized United States is separately administered and regulated, most appear to follow fairly consistent armament policies, based on issuing each sworn officer with one weapon for which he or she is personally responsible. Reserve stocks are small. In the departments polled for this research, reserves amounted to approximately five to eight per cent additional weapons, intended primarily to cover breakage. Shotguns are also a standard US police weapon, with police forces usually buying enough to equip their patrol cars on call, although the procedures and quantities vary considerably. In addition, officers on patrol normally carry one or two less lethal weapons, typically a baton and pepper-gas.

Aside from their normal everyday armament, modern police forces often stock special weapons. These military-style weapons kept in reserve include automatic rifles, sub-machine guns, sniper rifles, and sometimes even grenade launchers, the latter usually intended for firing tear gas. In the United States, these other lethal weapons are usually reserved for specially trained teams, typically found in larger cities. In the cities polled, these units averaged some 18 personnel (part-time officers normally assigned to other duties) with a total of approximately 24 special weapons in all (a mixture of sniper rifles, carbines, sub-machine guns, and a grenade launcher).



*In times of peace, most people probably never come closer to a firearm than an occasional glance at the handle of one sticking out of a police officer's holster.*

Table 2.2 Police weapons in Belgium, 2000

Category	Type	Sub-Total	Total
Revolvers	Smith & Wesson .38	10,130	11,479
	Various .357	1,349	
Pistols	FN	5,645	9,884
	Glock	1,939	
	Various	2,300	
Shotguns			1,286
Sub-machine guns	Uzi	588	1,221
	Heckler & Koch	300	
	Steyr	245	
	Various	88	
Automatic rifles	FN FAL	30	40
	Various	10	
Sniper rifles	Ruger	6	19
	Steyr	5	
	Various	8	
Ceremonial rifles	US M-1	24	24

**Total Belgian police firearms: 23,953 for a 17,767-man police force**

Source: Commission Permanente de la Police Communale en Belgique, 2000

To be sure, police in many countries carry sub-machine guns or automatic rifles. To date, the country most forthcoming with its police weapons statistics is Belgium, which reported a total of 23,953 firearms for 17,767 sworn police officers as of July 2000 (see Table 2.2). Most Belgian officers carry a handgun, either a pistol or a revolver, as well as less lethal weapons, usually a baton and pepper-gas. Additional firearms include a stockpile of shotguns, ostensibly for riot control; sub-machine guns, primarily for security details protecting VIPs; automatic rifles; a few dozen sniper rifles; and even two dozen weapons of World War II vintage, presumably for ceremonial duties. While some police forces, such as the Belgians, are better armed quantitatively, there is less evidence that the police in such countries are better armed qualitatively.

Based on survey data, it is possible to estimate the total number of US official police firearms, averaging the number of weapons per police officer in known cities and subsequently multiplying by the total number of officers nationally, including other sworn officers, such as those in sheriffs' departments, state police, and federal officers. This results in a national figure of approximately 813,000 American police firearms of all types. It should be emphasized that these are official weapons: most American police departments 'officially permit and unofficially encourage' their officers to carry private back-up weapons. Typically, this is a small handgun in a back or sock holster. Since these are privately owned weapons, their numbers are covered in the private gun ownership statistics that follow.

Available data from three other countries—Belgium, Norway, and South Africa—suggest that the US example should probably be placed towards the middle of the spectrum of global trends for police armament (see Table 2.3). This is shown by comparison with the countries that have released official information on the numbers of both police officers and weapons. Norway, with a confirmed total of 9,000 police firearms, has a police force of 7,500 officers and, with only one police officer for every 600 citizens, is lightly policed<sup>23</sup> compared to the United States, where there is one police officer for every 421 citizens. Similarly, Belgium, with a total of 17,767 police offers, has one officer for every 570 people. South Africa, by comparison, is a heavily policed nation, with one officer for every 290 people. Despite this important difference, the ratio of officers to firearms is much closer in these four countries, ranging from 1.2 guns per officer in Norway, to 1.45 per officer in South Africa.

Extrapolated to the rest of the world, the experiences of these countries suggest that, in a world with six billion people, there are a total of approximately 10 to 21 million police officers. The same logic leads to the conclusion that they are armed with a global total somewhere between 12 and 30 million official police firearms (see Table 2.4). Assuming that there is a global average of one armed police officer for every 421 citizens—which would correspond to the high but not extreme level in the United States—the global total number of police firearms would be no higher than approximately 18 million.

*In a world with six billion people there are 10 to 20 million police officers, armed with 12 to 30 million firearms.*

Table 2.3 Police weapons in selected countries

Country	Population	Sworn Officers	Handguns	Shotguns	Special Weapons
Norway*	4,500,000	7,500	6,000	—	3,000
Belgium*	10,100,000	17,767	21,363	1,286	1,221
South Africa**	40,000,000	137,500	200,000	?	?
United States***	270,000,000	641,000	680,000	131,000	20,000

Source: *Military Balance 1999-2000*

\* Official government statistics made available to the *Small Arms Survey*.

\*\*All South African Police Service (SAPS) weapons, including shotguns and special weapons. Estimated by Jakkie Polgieter, private correspondence, April 2000.

\*\*\* *U.S. Crime Statistics 1998*, p. 291. All US police firearms figures are estimates based on surveys by the author.

Table 2.4 Calculating global police firearms

Country	Officers/ Population	Weapons/ Officer	Equivalent Global Officers	Equivalent Global Police Firearms
Norway	1/600	1.2	10,000,000	12,000,000
Belgium	1/570	1.3	10,500,000	13,650,000
United States	1/421	1.3	14,000,000	18,200,000
South Africa	1/290	1.45	20,700,000	30,015,000

### Small arms of government armed forces

Unlike police weapons inventories, which are a relatively small proportion of the global small arms stockpile, the weapons of armed forces constitute a very large proportion. This is not because active-duty soldiers are more numerous than police officers; on the contrary, their numbers around the world appear to be generally comparable. Rather, it is due to the fact that armed forces are inherently better armed and maintain larger reserves. Why is this necessary?

While deadly force is the exception for the police, whose individual operations seldom last as long as a day, the armed forces prepare as if deadly operations were the norm to be conducted over a period of weeks or months. This preparing-for-the-worst approach holds true even if much of their actual activities consist of peacekeeping or police-type duties. Soldiers generally carry rifles instead of pistols and reserve stocks tend to be more plentiful to compensate for much greater anticipated breakage or other losses. The armed forces also stock a much wider variety of lethal small arms, including grenades, machine guns, mortars, anti-tank, and anti-aircraft weapons. Finally, armed forces carry ammunition primarily for sustained and highly intense combat operations rather than intermittent encounters.

Another major difference is the importance of reserve stocks in military planning. This stems from the way many states prepare to meet challenges to their highest national interests, which compels them to prepare to mobilize a far greater military force than they could afford to sustain in peacetime. Beginning with the European arms races in the second half of the 19<sup>th</sup> century, when pressure to maximize mobilization led to the creation of the Nation in Arms, in which all physically fit men of military age were expected to serve, reserve forces have been essential to military planning in many countries.<sup>24</sup> Reserves vary greatly in proficiency and utility—some are highly professional, others are just glorified drinking clubs—but all require basic small arms to retain any credibility. Even when the troops were little more than imaginary—just something to plan for—the weapons had to be real.

At their apogee in the mid-1980s, some countries maintained reserve forces five or even ten times the size of their standing armies (see Table 2.5). Since the end of the Cold War in Europe in 1989 and the decline of extreme threats to national security among most states elsewhere as well, reserve forces have atrophied even faster than active duty contingents. In some cases, their weapons have since been transferred abroad to permit poorer countries to modernize their own reserves. Except for a few highly publicized cases, though, the weapons originally procured for reserve forces remain, swelling national inventories.

A final factor contributing to the much greater dimensions of military small arms inventories are paramilitary forces. These are special forces, under the authority of the Ministry of Defence or the Ministry of the Interior, usually responsible for domestic security. They operate primarily at home against major threats to the state, often in situations constitutionally forbidden to the armed forces. Well-known examples include the French Gendarmerie, India's elite Rashtriya and Assam Rifles,

Table 2.5 Examples of Cold War era active, reserve, and paramilitary forces, 1987 and 1999

Country	Active Duty	Reservists	Paramilitary	Total 1987	Total 1999
USSR/Russia	5,130,000	6,265,000	530,000	11,925,000	3,978,000
Vietnam	1,052,000	4,000,000	3,600,000	8,652,000	9,000,000
Spain	275,000	2,400,000	66,000	2,741,000	710,000
Switzerland	20,000	625,000	0	645,000	388,000
India	1,262,000	460,000	672,000	2,394,000	2,791,000
Israel	149,000	554,000	4,500	707,500	604,000
Cote d'Ivoire	7,000	12,000	7,800	26,800	33,000

Sources: *The Military Balance 1987-1988*, *The Military Balance 1999-2000*.

or the Italian Carabinieri. In many countries, these forces can also be much larger than the traditional armed forces. The largest essentially are reserve forces intended to counter a foreign invasion, like Cuba's Territorial Militia with over one million members, and Vietnam's People's Militia with four to five million members. The least reputable are ad hoc forces, personal armies raised by local warlords that are outside official command structures and frequently beyond the pale of the law. Typically tolerated by the state instead of being organized by it, such paramilitaries lie at the juncture between government forces and insurgents.

#### *Barriers to transparency: Secrecy and ignorance*

Although there is reliable and detailed information on the major weapons systems of virtually all armies of the world, there is virtually no public information on the number of small arms at their disposal. As is usually the case in discussions of small arms, information tends to be exclusively about types, not quantities. While many governments release precise statistics on the number of major conventional weapons their forces deploy, very few provide comparable data on their small arms. The only quantitative information tends to be from procurement contracts and export orders, which many countries make public. While it is possible to determine the quantities of small arms being acquired in selected countries with information like this, it is quite different from establishing how much they already have.

It appears that some governments themselves do not even know the size of their major weapons stocks, let alone their small arms inventories. An extreme example is Kazakhstan, where an export scandal involving the recent unlicensed sale of MiG-21 fighters to North Korea led the Defence Minister to confess that 'Unfortunately, up to now, we do not have a full inventory and do not know how many arms we own.'<sup>25</sup> Under such circumstances, it would be optimistic to expect such a country to command the details of its small arms arsenal. If a country does not even know how many aircraft—each worth millions of dollars—it has, what can be expected of its inventory of small arms, worth no more than a few hundred dollars each?

Determining the size of government armed forces' small arms inventories cannot be separated from the broader issue of transparency. Despite the fully established place of the small arms issue in international affairs and the broad international participation in a variety of initiatives to address the issue, very few countries are willing to share statistics on the small arms inventories of their own armed forces. Some governments maintain that national sovereignty and security require such reticence. Others are unable to produce relevant data. In yet other cases, civil servants or military officers have volunteered that their ministries or armed services were simply 'uncomfortable' with the idea.

Official discomfort is much different from compelling national interest. For many governments, the problem appears to be more a matter of habit than motives. In lieu of strong arguments against releasing detailed information, it seems likely that a commitment from national decision-makers would be enough to break through traditional attitudes.

The same thing has already happened in other areas of national security previously shielded by official secrecy—areas much closer to unambiguous national interests. For example, over the last decade, most countries have concluded that national security is better served by sharing (rather than concealing) data on nuclear delivery systems and warheads, chemical weapons, transfers of major conventional weapons, and even anti-personnel landmines, which most countries now declare in compliance with international agreements. Most of the European Nations, as well as Canada and the United States, already declare their major conventional armaments under the 1993 Treaty on Conventional Forces. The field of small arms may just be awaiting its turn.

### *Examples of data on the total firearms of government armed forces*

Until that happens, the best general impression of the number of small arms of government armed forces around the world may come through formal estimations, based on applying the number of weapons per soldier in a few well-understood cases to arrive at global totals. Unfortunately, there is a serious shortage of cases to use for estimation. The best-documented examples tend to be historical. For example, in World War II, the US Army procured a total of 12.6 million rifles, 1.8 million sub-machine guns, and 2.8 million handguns of all kinds. When added to a pre-war stockpile of some 1.5 million firearms, this gave a total of almost 19 million firearms for an army that crested at 8,267,958 troops in 1945—some 2.3 firearms per soldier and aviator (the US Air Force became independent only in 1947).<sup>26</sup> The ratio of firearms per soldier—revealing, albeit dated—illustrates the fact that firearms, which will last for decades in proper storage, need to be replaced rapidly when used in actual combat. A few contemporary examples provide the following somewhat sketchy information:

- **Norway:** The Norwegian Ministry of Defence has reported that its inventories include 28,270 handguns ('one-hand weapons') and 266,800 rifles ('two-hand weapons'). Whether these include all types of firearms, such as machine guns or stockpiles for reserve forces, is not clear.<sup>27</sup>
- **South Africa:** The South African National Defence Forces have not revealed official information either, but they are understood to keep a total of some 450,000 modern rifles, 17,000 pistols, and thousands of machine guns, although this, too, does not include extensive war reserves.<sup>28</sup>
- **Sweden:** The Ministry of Justice revealed that the country's armed forces control 920,000 firearms but, without a breakdown by type and service, this is only suggestive.<sup>29</sup>
- **United States:** The number of M-16 rifles owned by the US Army and US Air Force reportedly stands at 720,000 and 220,000 respectively.<sup>30</sup> These figures do not appear to include obsolescent weapons nor are there figures for the other services—the US Coast Guard, Marines Corps and Navy—or for reserve units and the National Guard (see Box 2.3).

The only comprehensive official military small arms figures to be shared so far come from the Canadian Department of National Defence (see Table 2.6). The Canadian data are highly revealing since they cover all the armed services and reserve organizations. They show not only the number of weapons needed to equip standing forces, but the extent of one NATO ally's preparations for war time losses and its preparedness for combat losses today. With a total of 233,949 firearms of all types to supply a combined force of 60,600 active-duty military personnel and 43,300 reservists (i.e. 103,900 all together), Canada has 2.25 firearms per uniformed soldier, sailor and aviator. The ratio of 2.25 firearms per combatant is virtually the same as the ratio of US firearms procured for each uniformed soldier during World War II, a fact of more than coincidental significance.

*In World War II, the US Army procured a total of almost 19 million firearms for a force of 8,267,958 troops—some 2.3 firearms per soldier and airman.*

### Box 2.3 Small arms wear wings and anchors

Official military small arms involve much more than each country's army. Although the land forces are the best known, and usually the largest armed forces customer for small arms, they are not the only ones. All branches of the armed services are usually large buyers. Only the Marines—with their mission of projecting force from ship to shore—require a full suite of the various types of small arms as well. Other services tend to focus on firearms.

Air Forces require large guard units to insure the safety of their aircraft and facilities from terrorists or special forces attacks. Navies and Coast Guards must not only protect their shore installations; in addition, every ship must be able to defend itself from hostile boarding attacks. Many countries also have large independent forces of border guards, paramilitary, and/or gendarme forces for domestic security. Although exact information is lacking, it appears that the needs of the other services combined makes up roughly half of many countries' military small arms procurement.

Other armed services can also take major initiatives in small arms development. Depending on budgetary politics, they may be in a position to buy more advanced small arms ahead of the Army or Marines. In some cases, exceptional leadership may lead them into pioneering roles. The best known example is the US Air Force under the leadership of Chief of Staff General Curtis LeMay, who supported the development of the M-16 and began equipping his service with it in 1962, a move that eventually convinced the US Army to overcome its resistance to the 'plastic toy rifle' which it adopted in 1967.<sup>31</sup>

*In Canada, there are a total of 233,949 firearms for a combined force of 60,600 active-duty military personnel and 43,300 reservists—that is, 2.25 firearms per uniformed soldier, sailor and airman.*

With so few bases for comparison, it is no small irony that two of the only other sources left concern the armed forces of countries which no longer exist: East Germany and the former (pre-1991) Yugoslavia. While most current states continue to shield accurate data about their official small arms inventories, non-existent states have no interests to protect. Although the data for these former states are not comprehensive in specific categories—especially for firearms—it is highly revealing about the kinds of inventories governments tend to maintain.<sup>32</sup>

However, both the former German Democratic Republic (GDR) and the pre-1991 Yugoslavia were weak states with questionable legitimacy, even among their own people. Both of their armed forces were unique manifestations of the Cold War.

Table 2.6 Small arms of the Canadian Department of National Defence, 2000

Firearms Type	Quantity	Other Small Arms	Quantity
Pistols	25,125	40mm grenade launcher	336
Rifles & carbines	169,053	60mm mortar	440
Sub-machine guns	25,563	81mm mortar	142
Sniper rifles	487	Carl-Gustav LAW	921
Shotguns	700	Eryx SRAAW	435 launchers
Light machine guns	6,932	TOW	147 launchers
Medium machine guns	4,735	Javelin SAM	110 launchers
Heavy machine guns	1,354		
<b>Total firearms</b>	<b>233,949</b>		

Source: Canadian Departments of National Defence, and Foreign Affairs and International Trade, 2000.

- East Germany needed large armed forces both to show the Soviet Union that it could maintain domestic order and to pre-empt expansion of Soviet forces into its territory (at the end of the Cold War in 1989, the Soviet Union still had over 400,000 troops posted there). On the other hand, its forces also were limited by Moscow, which kept them from growing too large and potentially independent.
- Yugoslavia required large forces of its own, both to deal with potential separatism and to ensure its independent position as a non-aligned Marxist state. President Tito's personal commitment to guerrilla warfare—he was an expert guerrilla leader during World War II—led to even greater stockpiling (see Box 2.4).

While one must be cautious when generalizing from these examples, it appears that East Germany was more typical of the way most states arm themselves, while Yugoslavia was a massively-armed state, representative only of the most extreme end of the small arms spectrum.

### *A preliminary global estimate*

From these detailed examples, it is possible to extrapolate the number of small arms in official military hands around the world today. Dividing the number of weapons in each example by the total number of soldiers, sailors, and aviators produces a multiplier that can be applied globally. Although caution is clearly called for, when used with care, this approach generates a useful estimate of the minimum number of firearms likely to be stockpiled by government armed forces around the world.

#### **Box 2.4 Stockpiles and strategies: The former East Germany and pre-1991 Yugoslavia**

Sometimes the best way to get solid information is a *post mortem*. Beginning in 1990, a series of reports were compiled, initially by the German Democratic Republic (GDR) and subsequently by the united Federal Republic of Germany. They grew in scale and quality as additional stockpiles were discovered and added. The data used here, based on 1994 information sources, are probably not comprehensive; however, they provide unique insights into the evolution of one country's small arms inventories. In both the East German and Yugoslav cases, there is a strong relationship between the number of small arms available and the number of personnel in uniform (see Table 2.7). East Germany's stocks of AK-74 rifles (a more advanced version of the better known AK-47, using lighter ammunition) were reserved for its standing armed forces.<sup>33</sup> They totalled about 171,925 AK-74s, compared to a total of 137,700 active-duty personnel of the New People's Army.<sup>34</sup> The much larger stockpile of older AK-47s—approximately 783,217—is more than double the total of armed forces reservists and Ministry of Interior border troops, some 364,000 altogether. The total ratio is 1.9 firearms per uniformed soldier.

The small arms inventories of the Yugoslav People's Army (YPA) and the reservist Territorial Defence Army (TDA) appear to have been proportionately much larger. Although its standing forces were not exceptionally large for the times—with some 195,000 personnel on active duty, including Ministry of Defence border guards—the large reserves of some 510,000 were typical of a country relying on rapid mobilization for territorial defence, such as Finland, Israel, and Sweden.<sup>35</sup> With a total of 2,330,000 rifles for 705,000 readily mobilized troops, Yugoslavia maintained a vast stockpile.<sup>36</sup>

Specific strategies may account for the differences. Although East Germany had to be well-armed, it was planning for a short war in which it would fight together with the entire Warsaw Treaty Organization, while Yugoslavia was planning for a long war which it might have to fight alone.

At the same time, attention must be called to certain dynamic factors in operation since the late 1980s. Since then, there has been a steady decline in the number of soldiers, sailors, and aviators in uniform around the world, as most countries trimmed the number of active and reserve troops. While troop numbers have gone down, the guns bought when forces were bigger have not disappeared. Thus, a mirror image of post-Cold War troop cuts has been the accumulation of large stockpiles of excess equipment. Some of them have been stored; many have been transferred abroad, allowing regional militaries to complete the modernization of their forces. But—significant to note—very little of this excess weaponry has been destroyed.

The ideal basis for estimating the number of global military firearms would be to calculate it using the maximum military strength of all military units in the world in recent years. This approach would stress, not the number of troops actually assigned, but the authorized strength for which most units are equipped. In lieu of such detailed information, the best surrogate for the maximum dimensions of the world's militaries is the number of troops in uniform during the year of greatest military expansion around the world, which was 1987.

Although there are approximately 22,300,000 military personnel on active duty today, back in 1987 there were some 28,300,000 soldiers, sailors, and aviators serving on active duty the world over.<sup>37</sup> To this figure must be added official paramilitary forces, which increase the total number of full-time troops at that time to almost 35 million. In addition, there were a total of approximately 55 million reservists ready for mobilization for combat duty. All in all, at their maximum level of military preparedness, the governments of the world were in a position to mobilize 90 million combat troops for military service, with weapons on hand to equip them.<sup>38</sup>

Of the countries for which adequate data could be compiled—the former East Germany, pre-1991 Yugoslavia, contemporary Canada, and Norway—Canada appears to offer the most suitable basis for comparison. The Yugoslav example, at the high end of the spectrum, would be applicable only to those countries with intensive military preparations, stressing the nation in arms and people's wars, such as China, Cuba, or Vietnam. At the other extreme, the Norwegian example is incomplete, based as it is on only partial stockpile data. Even so, Norway's modest military preparations as revealed here resemble countries prepared to fight only skirmishes or the shortest of conflicts.

Only a handful of comparable nations, apparently prepared only for minimal use of military force, come to mind: certainly countries like Costa Rica and Panama, which have no armed forces, only gendarmes, and the Baltic States (i.e. Estonia, Latvia, and Lithuania). This leaves the other two examples—the former GDR and Canada—as most suitable for global comparisons, with Canada approaching the lower end of the likely range of international military firearms inventories.

Using Canada, therefore, as a benchmark, and assuming global levels of armaments proportional to Canadian levels in the late 1980s, there were at least 202,000,000 official military firearms in the world, including automatic rifles and sub-machine guns, pistols, light and medium machine guns (see Table 2.7). Given the relatively modest levels of Canadian stockpiles, this figure can safely be regarded as a minimal estimate. Actual figures are likely to be higher. Virtually all of these guns remain in existence today.

An exception must be made, though, for attrition. Some of the firearms in existence at the peak of global armed forces' presence in the mid-1980s have been lost through normal attrition. Although most military firearms are amazingly durable, designed to withstand not just the rigours of combat, but also the imaginative abuses that soldiers routinely inflict upon them, most attrition appears to occur when weapons are broken beyond repair in training. Operational tempo is crucial to the rate of attrition, another facet illustrated by the Canadian example. Although its forces have not fought in combat since Korea, Canada actively contributes to UN and NATO peacekeeping operations, be they in the Middle East, Somalia, Bosnia, Kosovo, or elsewhere. As a result, its ground troops undoubted-

*The year of greatest global military expansion was 1987 when the governments of the world were in a position to mobilize 90 million combat troops for military service, with weapons on hand to equip them.*

Table 2.7 Estimating global official military firearms inventories of the late 1980s, selected examples

Weapon	Country Multipliers			
	1989 Yugoslavia	1990 GDR	2000 Canada	2000 Norway
Automatic rifle multipliers	3.26	1.91	1.63	1.49
Est. world military total at 1987 troop levels	293 million	172 million	147 million	134 million
Pistol multipliers	0.74	0.55	0.24	0.16
Est. world military total at 1987 troop levels	67 million	48 million	22 million	14.4 million
Light/medium Machine gun multipliers	0.39	0.11	0.11	—
Est. world military total at 1987 troop levels	35 million	10 million	10 million	
Total firearms multipliers*	4.53	2.56	2.25	1.65
Est. world military total at 1987 troop levels	407 million	230 million	202 million	149 million

Note: \*Also includes multipliers for sub-machine guns, shotguns and sniper rifles, when available  
Sources: Gorjanc, 1988; Military Balance 1986-87

ly have lost additional firearms. The impact of attrition on total global military stockpiles is important, but it is also difficult to assess, depending on highly idiosyncratic factors like maintenance, intensity of training, and the extent of their operational deployment.

To the earlier cited figure of 202 million official military arms worldwide must be added subsequent military procurement of newly manufactured firearms since 1987, the base year for calculation. According to the most detailed estimate available, production of military firearms remained at a level of roughly 3 million annually from 1987 through 1991, falling to an average of approximately one million per year thereafter, beginning with 1992 (PRODUCERS). This would mean that the global stockpile of military firearms has risen by an additional total of some 24 million small arms. Taken together, and assuming that attrition losses have not been very significant, the likely minimum Cold War stockpile plus subsequent production would place the current (January 2001) global stockpile of government-owned military firearms at approximately 226 million or greater, minus any attrition.

### The firearms of insurgents and organized crime

The essential rule of guerrilla warfare holds that—by taking advantage of the surprise factor, striking when the risks are low and retreating when the risks are high—a small insurgency force can tactically dominate a much larger conventional army. The same also holds true for guerrilla weapons. Although their numbers may be far smaller than those of their conventional, government-armed adversaries, insurgent arsenals tend to be far more deadly and destructive. While all small arms and light weapons have the potential to cause needless death and suffering, these are the weapons most likely to be used to harm.

Not only are the armaments of non-state actors likely to be more deadly, they also tend to be far more elusive. The problem of determining the quantity of military small arms pales in comparison to the problem of quantifying the small arms of insurgents and other non-state actors. While placing greater demands on the accuracy of outside observers, the smaller size of rebel forces also makes transactions harder to spot and track. Voluntary statistics are unlikely. Not only is it hard

*As of January 2001, the global stockpile of government-owned military firearms was conservatively estimated to number about 226 million.*

to imagine arms control co-operation with most ongoing insurgencies and other violent groups, many major insurgencies are so secretive, decentralized, or disorganized that they themselves may not have anything beyond a general sense of their own weapons inventories.<sup>39</sup>

Despite their elusiveness, however, insurgent weapons are often those of most immediate importance internationally. These are the small arms at the nexus of the greatest political instability, threatening violent challenges to the authority of states, and creating immediate dangers to the lives and welfare of civilians. They are also the weapons upon which many governments at the 2001 United Nations Conference on the Illicit Trafficking in Small Arms and Light Weapons in All Its Aspects focus. Even if they do not constitute a major share of the global small arms arsenal, these considerations make it essential to examine their numbers very carefully.

To be sure, one must avoid exaggerations or misleading comparisons; as political scientists like Barry Buzan and Ken Booth have shown, more people are threatened by the misrule of states than are endangered by challenges to state authority.<sup>40</sup> Nevertheless, the chaos and disorder of intra-state warfare makes a better understanding of this aspect of the small arms phenomenon essential.

### *Trends in communal and intra-state conflict*

The armaments of non-state actors are heavily influenced by the intensity of organized sub-state violence and other forms of communal warfare. The most important trend affecting small arms flows to these factions had been the decline of communal warfare and other forms of sub-state conflict since the mid-1990s. While there was a widely perceived rise in communal conflict, it is increasingly clear that this was more apparent than real, dominated by wars ignited by the disintegration of the Soviet Union and Yugoslavia. ‘Many observers mistook these wars for the start of a new trend’, wrote the political scientist Yahya Sadowski, but he concluded that, on the contrary, ‘the state-formation wars that accompanied the “Leninist extinction” now appear to have been a one-time event—a flash flood rather than a global deluge.’<sup>41</sup>

This trend can be traced in data on the number of wars (conflicts with 1,000 or more battle deaths), which declined from 37 in 1990 to between 25 and 27 in every year since 1995.<sup>42</sup> The reason for the decline is surprisingly simple. As noted by the scholar of communal conflict, Ted Gurr, ‘Two-thirds of all new campaigns of protest and rebellion since 1985 began between 1989 and 1993; few have started since. The decline in new protest movements foreshadows a continued decline in armed conflict. Since the number of new communally-based protest campaigns has declined—from a global average of ten per year in the late 1980s to four per year since 1995—the pool of potential future rebellions is shrinking.’ Most on-going conflicts are also de-escalating, as rebels demand, not independence, but autonomy, which states are more willing to offer.<sup>43</sup>

However, as shown below, there is a strong regional component in these assessments. The focal point of sub-state warfare has shifted increasingly toward sub-Saharan Africa, the one region where the problem is unambiguously growing worse, bringing trends in insurgent gun trafficking with it.

### *The special problems of quantifying insurgency weapons*

Although there is no shortage of reports about the weapons of insurgents, most of this is highly anecdotal. Even so, such accounts help illuminate the dynamics of black and grey market transfers of small arms and light weapons to secessionists and other non-state factions (ILLICIT TRANSFERS). Typical reports note the types of weapons used in armed conflict, observed in the field, or seized by police and the armed forces. Quantitative information on arms deliveries or factional arsenals becomes available only under special circumstances and, even when sufficiently detailed, such reports are questionable at best. Some of the best information comes from actual brokers’ contracts,

*Although the decline in new protest movements foreshadows a continued decline in armed conflict, sub-Saharan Africa is the one region in the world where the problem is unambiguously growing worse.*

but these are rarely revealed. As a result, we know a lot about the kinds of weapons involved and the transfer processes at work, but relatively little about the quantities being shipped. This kind of research is ultimately too idiosyncratic to form a cumulative portrait of global processes.

Under these challenging circumstances, the best way to estimate the full scale of insurgent small arms is through formal modelling. This may be the only way to arrive at a global figure covering all small arms inventories and acquisition by insurgents. While formal modelling cannot determine exactly how the world's insurgents are armed, it can give a useful sense of the scale of the problem. The most important characteristics to be identified are the size of a guerrilla or other fighting organization and its tempo of activity. With this information in hand, the likely small arms acquisitions of such fighting groups can be calculated. When this is done for all known insurgencies and other non-state armed forces, a global picture of the illicit trade in small arms for violent conflict emerges (see Box 2.5).

Using news reports and reference works believed to be most reliable, as well as the advice and comments of regional experts, the total number of active or full-time non-state combatants in 1999—the latest year for which complete data were available—was approximately 184,000. In addition, another 480,000 people carried arms for secessionist insurgencies or other non-state armed forces; of these, some were more intermittently active troops, while others were uninvolved in actual fighting (see Table 2.8).

If each of these combatants carried a rifle and one-quarter of them carried a handgun as well, then they controlled as many as 728,000 rifles and 182,000 handguns, or some 910,000 in all. This includes a stockpile estimated at ten per cent. Of this, an estimated 300,000 were new. Insurgent firearms appear to constitute approximately two-tenths of one per cent of all global firearms.

Geographically, the data suggest that the greatest flow of additional small arms to insurgents went to sub-Saharan Africa, the region with more active non-state combatants than the rest of the world together. Europe was a surprising second, with a large number of active non-state combatants and the largest concentration of armed militiamen. Although Western Europe has several small rebel and terrorist groups, Europe's global salience comes almost entirely from Kosovo and regions on the periphery of the former Soviet Union, including Chechnya and Nagorno-Kharabhak, as well as Turkey. The changes mentioned above also explain the declining salience of the Middle East. North America and Northeast Asia appear to be the regions least touched by the flow of weapons to illegal organizations.



Table 2.8 Insurgent and other non-state combatants and militia in 1999

Region	Combatant Status			Militia
	Active	Semi-Active	Inactive	
Sub-Saharan Africa	102,000	36,350	17,000	54,000
Europe	27,800	4,225	23,180	74,300
Latin America	22,500	2,400	5,000	5,000
South Asia	10,500	2,400	0	0
Central Asia	10,000	36,600	0	0
South East Asia	7,200	23,700	34,500	32,400
Middle East	3,750	39,450	14,000	63,550
North East Asia	0	5,000	0	0
North America	0	300	100	5,000
Total:	183,750	150,425	93,780	234,250

### Insurgent stockpile problems

One shortcoming of the approach used above is its omission of major insurgent stockpiles of excess or reserve equipment. In practical terms, such stockpiles are almost impossible to estimate without complete reports on the flows of weapons reaching these groups and, granted, most groups appear to have only relatively modest stockpiles. This is largely because they do not control territory where large stockpiles can be safely stored. But it is also due to military pressures that compel them to arm as many combatants as possible. Several major groups, on the other hand, do effectively control territory or have safe havens on the soil of neighbouring countries where they can and do stockpile weapons:

- The Kurdish factions, benefiting from the UN Air Exclusion Zone and their de facto autonomy from Baghdad, effectively control about 25 per cent of northern Iraq;
- Palestinian groups in Lebanon and Syria reportedly are permitted to maintain bases for their own use;
- The Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka reportedly stockpiles weaponry in the Indian state of Tamil Nadu;
- In Colombia, both the National Liberation Army (ELF) and the Revolutionary Armed Forces of Colombia (FARC) control regions where government troops are forbidden.

Because insurgent stockpiling is almost entirely covert and becomes evident only when the weapons are actually used, the figures shown here are inherently incomplete.

#### Box 2.5 Estimating insurgent small arms

The scale of insurgent small arms arsenals has been estimated by multiplying the number of non-state troops against a value for their probable maximum weapons consumption. The model owes its basic assumptions largely to the pioneering work of Trevor Dupuy, who devoted much of his career to studying the relationship between armaments and military effectiveness.<sup>44</sup> Although the use of a formal model—even one as succinct as that employed here—may seem unusual, it is worthwhile to recall the observation that virtually all analysis is based on a model, whether we acknowledge it or not.<sup>45</sup>

The number of armed members of non-state factions has been determined from monographs, press clippings, and reference works such as *Defence and Foreign Affairs Global Information System*, *Jane's Insurgencies*, *The Military Balance*, and *The Middle East Military Balance*. These have been accumulated and evaluated for the most reliable figures. Complete tables listing over 135 insurgencies, as well as the work sheets covering all insurgent and non-state groups covered in this report, are available on the Small Arms Survey website at [www.smallarmssurvey.org](http://www.smallarmssurvey.org).

Unless otherwise defined, total forces are assumed to consist of one-quarter full-time soldiers and three-quarters support forces and militiamen, the latter typically equipped at one-fourth the level of the former. In other words, active troops are engaged in regular fire or training, accelerating the loss and necessitating routine replacement of their equipment. The equipment of support troops and militiamen has a slower rate of breakage due to wear and tear. The following assumptions govern this model:

- **Active troops** are full-time or nearly full-time soldiers. They spend most of their time in military activity, including tactical operations, training, and garrison duties. They are assumed to be involved in two or more fire-fights per year. They consume small arms and ammunition rapidly and their equipment suffers from high rates of breakage and wastage. For present purposes, they are assumed to replace their weapons annually.
- **Semi-active troops** operate occasionally but typically spend a large part of their time in cantonments or at civilian work. Their military activity is mostly patrolling. Although they may occasionally fire their weapons, they usually get into no more than one fire-fight per year. Their weapons use is less intense, leading to replacement approximately every four years, or

*In the late 1990s, the greatest flow of additional small arms to insurgents went to sub-Saharan Africa, the region with more active non-state combatants than the rest of the world together.*

### *Fluctuations in insurgent activity and demand*

The scale of insurgent small arms is influenced by the level of conflict around the world. While government armed forces benefit from annual budgeting and long-term procurement planning, insurgencies are much more sensitive to the ups and downs of internal war and communal conflict. Since the demand for guerrilla weapons is determined largely by the rise and demise of fighting factions, there is an enormous effect on small arms transfers when groups are defeated, reduce the tempo of their operations, abandon armed struggle, become dormant, or emerge victorious and overthrow governments.

The effects of these vicissitudes on small arms demand is clearest in the massive scale insurgent wars of the 1990s (i.e. civil wars in Afghanistan, the Bosnian and Kurdish secessionist wars) which dwarfed all other current internal conflicts during that period. Within months of reaching their crescendos of violence, these conflicts either ended or began to recede. For example:

- **Bosnia:** Fighting in Bosnia, which involved some 300,000 combatants, ended with the 1995 Dayton Accords, which also gave the country a legitimate right to arm itself.
- **Afghanistan:** The total number of fully active Afghan guerrillas was estimated by the London-based International Institute for Strategic Studies at approximately 500,000 at the height of the fighting in the early and mid-1990s. Today the number of active Afghan resistance fighters has reportedly declined to some 40,000.<sup>46</sup> While Afghans may be replenishing their private weapons stockpiles, they clearly are not using them on a scale remotely comparable to before.

25 per cent annually.

- **Inactive troops** are those who have not been involved in armed clashes during the previous year. They train and may patrol and retain personal control over their arms. Their weapons are assumed to last ten years, requiring replacement of only ten per cent annually.
- **Support troops and militiamen** are not active combatants. Instead, they support combat elements or participate in occasional exercises and drills. They are trained in the use of personal weapons that are allocated to them. The weapons may be stored in a garrison arsenal so they have no personal control over them. These weapons are assumed to last ten years as well, requiring replacement of ten per cent annually.

Active troops—including guerrilla fighters—must replace their equipment regularly to remain fully capable of offensive action. It is a myth that small arms last forever. While this may hold true for weapons that are properly stored and cared for, with heavy use, small arms suffer breakage which can usually be repaired only by a professional armorer. Multiple repairs render most weapons unreliable and, ultimately, unusable. Even light use, when combined with regular carrying or drill, will eventually wear out a weapon, leading to frame cracks or other damage that eventually necessitates its replacement.

Losses among insurgents are likely to be much greater than for government armed forces, both because insurgents tend to be much more active, losing or breaking their weapons at a faster tempo, but also because they are less likely to have the ability to repair damaged equipment. For the purposes of this model, which tries to reflect likely maximum insurgent firearms procurement, it is assumed that active insurgent combatants replace all their firearms every year.

Rather than risk minimizing time problems, the approach used here intentionally errs in favour of exaggerated actual weapons consumption. Most guerrilla weapons do not appear to be replaced this often. Very few insurgents and other sub-state armed forces are engaged as heavily as the active troops described here. Contemporary groups that meet this high involvement level are the Kurdish PKK (until it suspended most fighting in mid-1999), the RUF of Sierra Leone and the LTTE of Sri Lanka. Other groups, even many with deservedly vicious reputations, are much less active by comparison. Many of the world's rebel armies, moreover, do very little besides routine patrolling punctuated by intermittent raids.

*It is a myth that small arms last forever.*

- **Kurdish insurgency:** Similarly, the Kurdish wars, when at their height in the early 1990s, involved a total of 80,000 full-time fighters in the three largest Kurdish rebel groups engaged in major campaigns against the Governments of Iraq and Turkey. As they arrived at understandings with their adversaries (as the Iraq-based Kurds did) or abandoned combat operations (as the PKK did in Turkey), they ceased to be fully active armies and evolved instead into part-time militias. Today there appear to be no more than 5,000 full-time combatants in their combined ranks and even these are not fully active.

As of January 2001, the Afghan and Kurdish conflicts had declined and their armies appear to have greatly diminished; whether through desertion or organized disbandment is not clear. Although neither region could be described as 'at peace', the tempo of fighting has obviously diminished, as shown by the retirement of hundreds of thousands of Afghani, and tens of thousands of Kurdish, soldiers. Although many undoubtedly retain their personal weapons and could be drawn into renewed fighting at quick notice, as of January 2001 they were militarily inactive, engaging in no more than occasional training, patrolling, or assemblies. Called back into action, they could immediately inflate local demand for arms and ammunition enormously, but they do not appear to be engaged in systematic re-armament today nor should they be considered a major market for re-armament in the near future.

Even quiescent factions may be using times of relative peace to re-group and re-arm. Especially those factions in effective control of territory can use conflict 'down time' to continue buying arms and accumulating stockpiles. But such peacetime procurement is virtually impossible to estimate. This problem points to a major rule governing our appreciation of the trade in small arms: in most cases, an unused weapon is a secret weapon, its existence unknown to the outside world. While the number of firearms used in combat can be inferred from the number of troops engaged, it is much harder to estimate stockpiles that are not used.

*A major rule governing estimates of all small arms trade is that an unused weapon is a secret weapon, its existence unknown to the outside world.*

### *From rebels to statesmen*

These examples also reveal the statistical importance of groups 'graduating' through victorious campaigns or political successes that catapult them into power. Finding themselves suddenly in control of the state transforms them from fighting factions into politically legitimate governing authorities. Victory changes factions in innumerable ways. Of most relevance here, they gain control of much greater resources, not only enabling them to acquire much more military equipment, but also to acquire it legitimately and stockpile it freely. Although their arsenals usually begin to grow exponentially, they no longer appear among global insurgent holdings. Illegal weapons suddenly become legal—although the weapons themselves have not changed at all; only the nature of their ownership has. Thus it is that 'overnight', the illegitimate firearms of criminals and subversives become the bulwark of the new national defence.

When several major factions gain power at once, the effect can be to swiftly reduce the level of overall global insurgent armaments—on paper at least. In actuality, the change is more apparent than real, a legal distinction, as their holdings are shifted from insurgent to state categories. However, the effect on the two categories is not proportionately the same. Global insurgent armament inventories are relatively small and highly sensitive to the departure of a major faction, which can sharply reduce the overall global total. But global state-owned armaments are much more numerous, and the shift of even the very largest insurgent movements into the state category has only a negligible effect on the overall global level of official state armaments.

The effects of these vicissitudes were prominent in 1994-95, when several major insurgencies and rebel movements suddenly acquired legitimate political power. The change was especially dramatic for the Afghan Taleban, which took control of most of the country in 1994. With victory, their 25,000

fighting men ceased to be guerrillas and became government soldiers overnight.

A different version of the same phenomenon is illustrated by the police and paramilitary forces of the Palestinian Autonomous Areas, which include approximately 35,000 armed police, security, and intelligence officers. Most of these were drawn from the ranks of former Palestinian guerrilla factions that, partially as a direct consequence, have declined dramatically in size. In both cases, the demand for small arms has not declined—quite the opposite, new roles have led to even more intense weapons procurement—but it has become legal.

### *Shifting regional insurgent demand for small arms*

Even though some insurgencies are acquiring less military equipment, others clearly are using more. The arms trade largely follows the armies. In the late-1980s and early-1990s, the illegal trade in small arms was directed largely toward conflicts in Afghanistan, Europe (Bosnia and Nagorno-Kharabhak), the Middle East (Palestinians and Kurds) and, to a lesser extent, to Africa (Angola, Liberia, and Sudan). Today small arms traffic is drawn overwhelmingly to the concentration of insurgent fighting in sub-Saharan Africa, especially to the Great Lakes Region and Sierra Leone, as well as to Angola and Sudan (BROKERS, ILLICIT TRANSFERS).

The greatest demand for small arms among non-state forces today is in sub-Saharan Africa, home to more than 60 per cent of the world's fully active non-state combatants. Totally displacing Central Asia and the Middle East, the region of sub-Saharan Africa is the most likely destination for most of the world's black and grey market small arms.

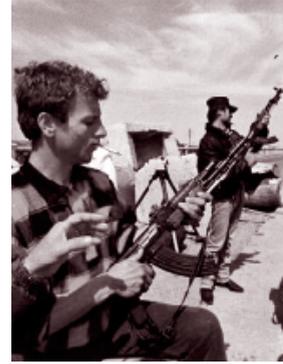
Surprising perhaps to those accustomed to associating violent conflict with less developed regions, Europe is the world's second most deadly region for secessionist fighting. This reflects the unsettled nature of Europe's periphery where wars resulting from the collapse of Yugoslavia and the Soviet Union continue in the Balkans and the Caucasus.

In Latin America and South East Asia, the level of conflict is relatively stable, although the most serious war sites have changed during the previous decade; in Latin America, from Peru to Colombia; and in South East Asia, from Myanmar to the Philippines. The regions least touched by conflict are Northeast Asia, where the problem is limited mostly to Russian organized crime groups, and North America, where Mexican revolutionary groups are active. The well-armed North American militia groups—which get so much media attention—are not included here. This is partially because they appear to acquire most of their weapons legally and because, despite their fearsome rhetoric, none have engaged in organized violence. The closest approximation to that was the network of friends and acquaintances responsible for the 1995 Oklahoma City bombing.

### *Private firearms: Legal and illegal*

In most parts of the world, the gravest daily danger of armed violence comes neither from repressive use of government weapons nor from the weapons of insurgent rebels. Rather, it is the misuse of privately owned weapons that translates directly into the crime statistics driving much of the concern with small arms proliferation.

Determining the number of firearms in private hands is made difficult by the diversity of national laws regulating gun ownership; by different licensing and reporting practices; by differences in national customs regarding gun ownership; and by the problem of illegal gun ownership. Although private gun ownership is regulated in most countries, many are unable to determine the number of private firearms at large in their societies. Small arms proliferation may be a definitive example of the way globalization is transforming the world, but globalization has yet to make inroads against the diversity of national policies regarding gun regulation.



*When guerrillas become government soldiers 'overnight', the demand for more small arms generally does not decline—it just becomes legal.*

*The greatest demand for small arms among non-state forces today is in sub-Saharan Africa, home to more than 60 per cent of the world's fully active non-state combatants.*

The seriousness of rising numbers of firearms in private hands is beyond dispute, but their numbers are the most elusive of all. There is such a severe shortage of hard data in this area that the estimating procedures employed elsewhere in this chapter cannot be applied to private small arms. The simple methods used above are based on correlations between people and their weapons: the number of police to the number of police firearms; the number of soldiers to the number of military small arms, etc. This reflects the underlying fact that, in order to do their job, the police require a certain number of weapons while soldiers need a different but still readily determined number. In each of those cases, national population or the number of gun owners, be they police or soldiers, is used as a substitute for the total number of firearms involved.

For privately held weapons, however, there are no universal rules of thumb. Each country has its own firearms culture, in which the various types of small arms have their distinct niche. Whether private firearms ownership is perceived as high or low, normal or exceptional, is a judgment call that each society renders in accordance with its own traditions.

Therefore, rather than rely on the types of generalizations that facilitated earlier estimations of police or military firearms, private guns have to be quantified through a country-by-country building-block approach. Currently, there is simply no alternative to adding up the numbers in each country to cumulatively arrive at regional and global totals. At this point in time, however, the building blocks—the specific national statistics—are missing in most countries. Creating them will be possible only through a co-ordinated international effort, probably relying on a combination of forthright official declarations, backed up by country-by-country public surveys, as discussed below.

#### *Licensed private firearms and the United Nations International Study on Firearm Regulation*

The most important effort thus far to collate available information on private firearms ownership is the United Nations International Study on Firearm Regulation. Undertaken in 1995-97 and updated in 1999 by the Vienna-based UN Commission on Crime Prevention and Criminal Justice, this is a collection of responses from national governments outlining their policies.<sup>47</sup> Submissions were received from 69 governments, but not all presented data on the specific question of the number of privately owned guns.

Updated data released by the Commission in 1999 included numerical data on firearm ownership from a total of 49 countries. Many lacked accurate data on private firearms ownership while others could account only for the number of owners—who require licenses in many countries—but not their actual guns. An even greater number of countries failed to offer any useful data at all. Some just failed to co-operate. Other holdouts, however, were governments that participated in other aspects of the study. Their explanations are often highly revealing about the nature of gun laws and the existence of relevant data within their societies. For example:

- **Chile:** Chile reported that data were 'not available because the system does not separate civilians from the military.'<sup>48</sup>
- **France:** French officials have said unofficially that their Government cannot supply information on private gun ownership because such information is confidential and cannot be released except in response to specific requests from the courts.<sup>49</sup>
- **Germany:** Germany explained that 'accurate figures are not obtainable since registration of entitled persons takes place at the lowest administrative level and is not centrally collected.' Instead, the German Government offered a 'realistic guesstimate' of 10 million licensed firearms owners but provided no estimate for actual firearms. The most recent estimates of actual firearms, from 1972, put the number in the range of 15 to 25 million. Moreover, the 'guesstimate' on gun owners and the old range for actual guns covered only the territory of the former West Germany; records for the former East Germany reportedly 'were deliberately destroyed'.<sup>50</sup>

*The risk of rising numbers of firearms in private hands is beyond dispute, but their numbers are the most elusive of all. If small arms proliferation is a definitive example of the way globalization is transforming the world, it has yet to unite national policies regarding gun regulation.*

- **Others:** A few countries, lacking accurate statistics from registrations, instead offered widely accepted estimates of national gun ownership. When based on the professional judgment of knowledgeable experts, these are a helpful substitute, as was the case with New Zealand's estimate of one million privately owned firearms. Other estimates, reflecting little more than journalistic speculation, may be highly misleading.

Testifying to the difficulty of co-operation between rival government agencies, a few countries—including Ecuador and Papua New Guinea—explained that their representatives were unable to secure the necessary co-operation from officials in other ministries of their own governments. Others, like Austria, Belgium, Estonia, and the Netherlands, reported that official data basically did not exist. And these countries, it should be noted, have been among the most co-operative. Several others, including governments that participated in other parts of the study—most prominently China and India—simply ignored the request for private gun statistics.

Adding all the actual submissions of privately owned and licensed firearms, including estimates for specific states, produces a total of almost 40 million firearms in public hands in 49 countries. In other words, the United Nations International Study on Firearm Regulation generated some useful information, but mostly served to confirm the lack of data in general and the widespread confusion over how to use the available data. No less revealing was the final submission by the United States. The US advised that it was unable to present formal information on licensed gun ownership since it has no national gun licensing for most firearms. Only eleven out of its 50 states require gun registration of any kind. Instead, the US presented the results of a major public survey—a 'scientific, privately conducted poll'—which indicated that US citizens owned approximately 192 million guns in 1994.<sup>51</sup> While the survey approach is less reliable than official numbers, where such figures do not exist, it may be the most effective way—shy of changing existing legislation—to answer basic questions.

Government data are available on US firearms production, imports, and exports, and this is very important for filling the gaps left by surveys. These data reveal that the US typically produces about 3.5 million guns annually for domestic customers and imports an additional 1.5 million (PRODUCERS). Adding these figures together suggests that, by the end of the year 2000, there were about 226 million private guns in the United States. Similar surveys have been undertaken in other countries. Prominent examples are:

- **Australia:** A survey revealed that in 1996 there were roughly 3.5 million privately owned firearms in the country. Since then, this number has decreased, largely through the prohibition of public ownership of semi-automatic rifles and shotguns. Indicative of the weaknesses of surveys, however, another survey, undertaken by the private Newspoll group and released by the Australian Attorney-General in 1997, concluded that the nation's citizens owned just 2.5 million private firearms.<sup>52</sup>
- **Canada:** A Government-sponsored study showed the country to have approximately 7.1 million private guns. At the time the survey was completed, gun registration was just beginning, so these were almost all legally unlicensed weapons.<sup>53</sup>

Ultimately, the only way to determine the number of guns in private hands is either through comprehensive reporting by the world's governments or through global surveys. Until this is possible, the easiest alternative is adding together available numbers. This approach is far from ideal, since it mixes registration and licensing data with official estimates and survey reports, often from different years.

Adding the available and reasonably reliable reports shows that there are at least 305 million privately owned firearms in the world today (Table 2.9). This, however, is a very conservative estimate. It underestimates gun ownership in many countries, most clearly in countries like Germany

and whole regions like Eastern Europe and the former Soviet Union. It completely leaves out the world's two most populous countries—China and India—as well as other countries with widespread gun ownership, including Afghanistan, France, Switzerland, Yemen, and most African states.<sup>54</sup>

One clear impression from the study is the overwhelming role of the United States in the world's private firearms arsenal. US dominance of private gun ownership is almost certainly exaggerated by the fact that other countries thought to have large civilian firearms inventories are not included in the UN International Study on Firearm Regulation . The addition of illegally owned firearms in other countries would also reduce the disparities. Nevertheless, the United States' essential prominence seems irrefutable. These results—incomplete as they are—also show that the majority of all the world's firearms—at least 55 per cent—are in private hands.

#### *Illegal firearms in private hands*

Legal firearms are only part of private gun ownership. How many illegal firearms are there in the world? The only truthful answer is that no one has any idea. Reminded daily by the rising dangers of illegal weapons use, journalists and even seasoned observers are tempted to indulge in guessing. In Brazil alone, it has been estimated that there are approximately 12 million unlicensed firearms out of 18.5 million total.<sup>55</sup> While the Government of the Russian Federation reports having 3.6 million registered private firearms, unofficial sources reportedly believe the illegal figure to be closer to 30 million. One estimate for all of South Asia—Bangladesh, Bhutan, India, Pakistan, Nepal, and Sri Lanka—posits that there are at least 73 million unlicensed firearms throughout the region.<sup>56</sup> A more cautious estimate from South Africa notes that 'an estimated 4.1 million firearms are licensed to civilians in South Africa, with ... estimates of illegal weapons ranging from 800,000 to 4 million.'<sup>57</sup>

*National submissions to the United Nations International Study on Firearm Regulation indicate that there are currently a total of almost 40,000,000 firearms in public hands in 49 countries. As there are some 200 countries in the world, this survey is clearly incomplete.*

Table 2.9 Total known private firearms

Source	Year(s)	Millions of guns
UN Firearm Study total (non-US)	1996	39
United States 1994 survey	1994	192
Subsequent US private gun purchases	1994-2000	34
Official estimates for Brazil, Germany and South Africa	1970-2000	40
China, France, India, Switzerland, and others		unknown
<b>Total</b>		<b>&gt;305</b>

Sources: *Commerce in Firearms in the United States, 2000*; Cook and Ludwig, 1997; UN International Study on Firearm Regulation, 1999

When it comes to unlicensed weapons, vague figures are not the only problem. Very specific ones are no more credible. This is illustrated by the example of the Philippines, the only government to release detailed information about illegal firearms ownership. In 1996, the Philippine police identified 160,750 unlicensed firearms in the country. By 1998, this figure had increased to 329,985 unlicensed firearms in the hands of enthusiasts, criminals, private armies, and rebel groups.<sup>58</sup> Given the nature of the problem, these seemingly precise numbers must be regarded with scepticism.

In fact, none of these figures should be regarded as anything other than suggestive. The problem of illegal gun ownership is serious and observers naturally want to associate the problem with a serious-looking number. But even the relationship between legal and illegal firearms ownership is often very slippery. An exception is the United States, where, for the most part, only stolen weapons are illegal. Canada, which historically had the same policy, is in the process of introduc-

ing national gun registration. One country without a history of firearms registration and rapidly mounting gun problems is Pakistan, which is in the process of trying to establish a legal framework for greater stability.<sup>59</sup> All such innovations, while beneficial, face problems of compliance. They tend to be more effective with the registration of new weapons, leaving the pool of older, unlicensed, and unregistered weapons untouched.

In the few countries where the scale of illegal firearms ownership is somewhat understood—especially Argentina and the UK—the approximate number of unlicensed firearms varies from half as much as the number of licensed guns in Britain to even more than the total number of licensed firearms in Argentina. Such estimates are too vague to establish a global figure. All that can be said is that the scale of the problem is very large indeed, probably amounting to several tens of millions of illegally owned firearms.

### *Answering the illegal and unlicensed firearms riddle*

The most feasible method to estimate the global number of illegal and unlicensed firearms is either through residual estimates or public surveys. The residual method requires accurate information on the number of firearms in existence and on all other major categories of firearms ownership. If these can be firmly established, then unlicensed guns would be the only category left unaccounted for. This recipe sounds straightforward enough: if the total number of guns produced in recent decades can be determined, as well as the number destroyed over the years; and then the number currently belonging to the police, the armed forces or those licensed to private owners are deducted from the total, the remainder must be the total of unlicensed firearms. Lacking accurate information for any of the first five categories, however, there is no way to calculate a residual figure at this point in time.

Ultimately, the most promising way to develop a general sense of the global distribution of illicit firearms may be to copy the American example and rely on public surveys. The relevance of polling was revealed recently in Argentina, where a privately commissioned survey showed that, in addition to their 1.75 million legally licensed firearms, the people of Argentina have at least 2.57 million unlicensed firearms. As the authors of the survey were careful to point out, their findings were tentative, but the sense of direction and overall scale of the problem are clear enough.<sup>60</sup>

There are other obvious weaknesses to this approach, especially when it comes to undemocratic or recently democratized countries where there is considerable public suspicion concerning the purposes and anonymity of polling. Some governments that restrict expressions of public opinion, especially in the Middle East, China, and some other East Asian states, may not be willing to permit this kind of activity. Even in a co-operative environment, polling is an imperfect science, especially when it comes to highly sensitive subjects like (possibly illegal) gun ownership. Even so, a programme of standardized public surveys covering the largest gun-owning societies would do much to overcome legal barriers to the release of licensing information and the inevitable problem of unlicensed weapons.

The advantages of surveys and polling are relevant virtually everywhere. Where there are no official records of gun ownership, the benefits are obvious. For a country like France, polling offers a way around official confidentiality. For others like Germany or Switzerland, it may be the best way of circumventing official hesitancy and the lack of federal record-keeping. In the Nordic region and other countries which license owners rather than individual firearms, surveys can help establish the number of firearms per licensed owner and thus the total number of weapons in each country. And for countries like Brazil, India, the Russian Federation, or South Africa, it is the only way to account for the presumably large number of unlicensed weapons.



## Conclusions

Small arms proliferation involves a large spectrum of different types of equipment designed to kill and maim. It is guns, however, that command the most attention. While this preoccupation should not lead observers and policy-makers to overlook other dangerous items, it may be appropriate nevertheless. Not only do firearms appear to cause the most death and injury, they also are the type of small arms that is most widespread, not just among armed forces, but also throughout much of civil society.

The above estimate resulting from this analysis—incomplete because several important categories are only partially included or left out altogether—reveals that there are at least 550 million firearms in the world today (see Table 2.10 and Figure 2.5). This amounts to at least one gun for every eleven of the world's people. Even though a large proportion of legally owned private guns are left out, as are all illegally owned private guns and all manufacturers' and dealers' stocks, it is still possible to clarify several critical questions. Above all, who controls most of the firearms in the world?

This analysis, tentative as it is, reveals that the results are not always consistent with the conventional wisdom:

- **Police stocks** appear to form a relatively small part of the total number of global firearms, often operating with modest reserves for breakage and special operations. The numbers derived from the small but diverse sample of countries used here show that there are approximately 18 million official police firearms globally—roughly three per cent of all known firearms.
- **Military firearms** is a category full of surprises. Experts, even in many Western and OECD states, often assume that the inventories of the armed services are kept close to the number of actual troops, with reserves only for breakage and minimal battlefield replacements. The examples here suggest that this assumption errs on the conservative side. Even countries with carefully controlled armed forces can have substantial small arms reserves of roughly double the nominal requirements, while some may have stockpiles of three or four times the basic requirements. The grand total for all kinds of government-owned military firearms in existence today is estimated at a minimum of 226,000,000 official military firearms, including automatic rifles and sub-machines guns, pistols, light and medium machine guns. This equals some 41 per cent of all known firearms. The largest concentrations appear to be among those countries with the largest armed forces and reserve organizations.
- **Private firearms** account for an enormous proportion of gun ownership. The total number currently is impossible to evaluate. The world's most populous countries—China and India—do not make data available. Nor do other countries with widespread public gun ownership like Afghanistan, France, Switzerland, and Yemen. Still others report only obviously incomplete

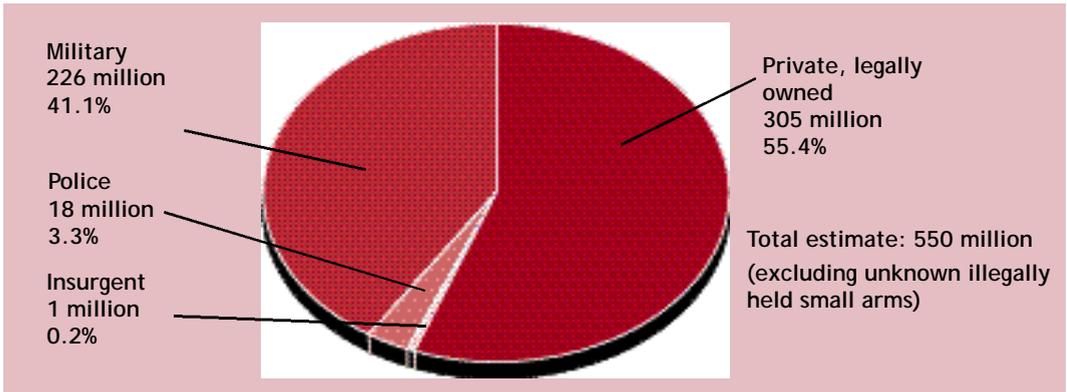
*There are at least 550 million firearms in the world today—one gun for every eleven people, including children.*

Table 2.10 Comparative distribution of known global firearms in 2001

Group	Estimated number of firearms	Percentage of total
Police firearms	18,000,000	3.3 %
Government armed forces	226,000,000	41.1 %
Private legally owned	305,000,000 +	55.4 % +
Insurgents and non-state forces	±1,000,000	0.2 %
<b>Approximate total</b>	<b>550,000,000 +</b>	<b>100.0 %</b>

Note: The above estimate does not include the large but indeterminate number of privately owned and illegal firearms for which no estimates are currently available.

Figure 2.5 Estimates of known global firearms, 2001



figures. But the existing data is sufficient to confirm that this is the largest single category of firearms, totaling a minimum of 305 million guns in the year 2000. This amounts to at least 55 per cent of all guns. With more complete reporting or surveys, both the total number of privately owned guns and their proportion of the global total undoubtedly would rise significantly.

- **Insurgent firearms** may provide the greatest surprise in terms of the relatively small size of stocks. The firearms under their control are estimated at approximately 910,000. The comparatively small scale of this figure, compared to the others developed in this chapter, partially reflects the declining incidence of communal warfare since the mid-1990s. Even more salient, the enormous havoc rebel factions can wreak upon life, welfare, and political stability does not require large weapons holdings—apparently as little as two-tenths of one per cent of all known firearms. The classic rules of insurgent warfare hold just as true for guerrilla weapons, enabling small rebel forces to tie up much larger forces sent to control their trepidations. Rebels with one-tenth the combatants and proportionately even less weaponry than their government adversaries still may be able to dominate the battlefields of internecine warfare.
- **Illegal private gun ownership** remains a serious and highly intractable problem for efforts at quantification. Compared to the small but systematic data developed for all other categories, the evidence developed so far is too anecdotal and too intermittent to be useful for broader generalization. All that can be said with certainty is that the total number of illegally owned firearms is in the range of tens—or possibly even of hundreds—of millions. The problem may be constructively addressed only through systematic international public surveys. Since illicit firearms have not been included in these estimates, the final figures shown here must be regarded as a substantial underestimate of the total number of guns in the world.

The cumulative portrait of the distribution of firearms around the world is highly tentative. All the numbers are estimates and will require constant revisions for years to come. The numbers themselves may be less consequential than the proportional distribution, which could prove highly relevant to the setting of political priorities for future national and international action, suggesting which problems are of greatest relative significance, which are most intractable, and which are most amenable to solution.

In conclusion, the most significant finding of this review is the overwhelming importance of official transparency and the advantages of public surveys as a substitute for comprehensive, official government statistics when the latter are unavailable. Only when governments and manufacturers begin to systematically share information on the number of small arms under their control, will it

become possible to identify the trends in global small arms with greater accuracy. Meanwhile, without the availability of better information, governments and the international community will continue to encounter unnecessary difficulties, inhibiting agreement on priorities for action and identification of the most suitable solutions. This means that many important aspects of small arms proliferation will remain beyond control, not just because of the weapons themselves, but also as a direct result of excessive secrecy regarding their numbers and whereabouts.

*The most significant finding is the overwhelming importance of official transparency and the advantages of public surveys.*

*For further information and current developments on small arms issues please check our website at [www.smallarmssurvey.org](http://www.smallarmssurvey.org)*

## 2 List of Abbreviations

---

ELF	National Liberation Army
FARC	Revolutionary Armed Forces of Colombia
FRELIMO	Frente de Libertação de Moçambique
FRY	Former Yugoslavia
GDR	German Democratic Republic
LTTE	Liberation Tigers of Tamil Eelam
NATO	North Atlantic Treaty Organization
OECD	Organization of Economic Cooperation and Development
PKK	Kurdistan Worker's Party
RENAMO	Resistencia Nacional Moçambicana
RUF	Revolutionary United Front
SIPRI	Stockholm International Peace Research Institute
START	Strategic Arms Reduction Treaty
TDA	Territorial Defence Army
UN	United Nations
UK	United Kingdom
USSR	Union of Soviet Socialist Republics
YPA	Yugoslav People's Army

## 2 Endnotes

---

1. One of the very best examples of what case studies can achieve is *Arming Rwanda: Arms Trade and Human Rights Abuses* (1994).
2. United Nations (1999b, para.12).
3. Singh (1995, p. ix).
4. Author's correspondence with Prakash Dikshit, November 2000.
5. Tara Kartha (1998, p. 19).
6. United Nations (1999a, para. 12).
7. Ezell (1986).
8. Ezell (1995, p. 9). Virginia Ezell provided additional comments on the origins of these estimates.
9. United Nations (1997, para. 35).
10. United Nations (1997, p. 31, Appendix III).
11. Allen (2000).
12. Chachiuva (1999, p. 16-18).
13. Smith, Batchelor, and Potgieter (1996, p.36).
14. Africa Confidential (14 April 1995, p. 7).
15. The figure of 6 million is cited in Chachiuva (1999, p. 21) and Jett (1999, p. 98). The estimate of 10 million appears in Mathiak (1997, p. 94), citing *The New York Times* (2 March 1997).
16. Population figures derived from IISS (1990, p. 139).
17. IISS (1990, p. 138).
18. Smith (1999a, p. 107).
19. Smith (1999b, pp. 47, 49).
20. Vines (April 1998, p. 19).
21. Based on data from Berman (1996 pp. 46, 48, 87-88). Berman's source is *Final Report of the Chairman of the Cease-Fire Commission*, 5 December 1994. Using the same raw data from Berman, Chachiuva arrives at a total of 214,219 weapons collected. (Chachiuva, 1999, p. 26). Most of the difference appears to be due to inclusion of 46,193 weapons collected after official demobilization.
22. This point was brought to the author's attention by Steve Shropshire.

23. This data was made available by Martin Langvandslien of the International Peace Research Institute, Oslo (PRIO).
24. The phrase was coined by the German General Baron Colmar von der Goltz, in the title of his book, *The Nation in Arms* (1913). See Carroll (1968).
25. *Baltimore Sun* (15 June 2000).
26. Thomson and Mayo (1960, pp. 156, 170, 174, 186). The size of the U.S. Army in 1945 is from Weigley (1967, p. 599).
27. Correspondence from Lt.Col. Ola Stubdal, Norwegian Defence General Staff, courtesy of Martin Langvandslien, PRIO, 20 September 2000.
28. Cock (1999, p. 160).
29. Justitiedepartementet (1999, p. 27, 36, 74, and 112-115).
30. Ezell (1999, p. 25) and Ezell (1998, p. 35).
31. Ezell (1969).
32. Nassauer (1995, p. 57) and Gorjanc (2000).
33. Ezell (1988, pp. 161-162).
34. IISS (1990, pp. 48-49).
35. IISS (1990, p. 95). The special characteristics of territorial defence are explored in Roberts (1976).
36. Gorjanc (2000).
37. Global troop levels from *World Military Expenditure and Arms Transfers 1998* (1999). According to BICC (1999, p. 162) the total number of armed forces personnel was 28.8 million in 1987 and 22 million in 1997. Both sources appear to refer exclusively to active duty personnel, including some paramilitaries.
38. Force levels derived from IISS (1987).
39. Cooper (2000).
40. Buzan (1991), Booth (1997).
41. Sadowski (1998, p. 13).
42. Sollenberg, Wallenstein, and Jato (1999).
43. Gurr (2000, pp. 52-64, quote from p. 53).
44. Dupuy (1990); and Dupuy (1987).
45. Epstein (1988, pp. 158-159).
46. IISS (1989, pp. 155-156); IISS (1999, pp. 159-160).
47. (United Nations, 1998). The study was mandated by a resolution of the UN Economic and Social Council (ECOSOC). Data was received from 69 participating governments.
48. United Nations (1999b). Updated Data, available at [www.uncjin.org/Statistics/firearms/index/htm](http://www.uncjin.org/Statistics/firearms/index/htm).
49. Private communication with Ed Laurance, December 1999.
50. United Nations (1999b).
51. The survey results are analysed in Cook and Ludwig (1997).
52. Harding (1996). The Newpollsurvey is cited in Alpers (1997).
53. See *Focus on Firearms* (3 March 1999).
54. These figures are available in the document, 'Statistics on firearms ownership, public and private.' Available at [www.smallarmssurvey.org](http://www.smallarmssurvey.org).
55. Mathiak (1997, p. 94).
56. *Nezavisimoe Voennoe Obrozrenie* (April 2000 p. 7); *Hindustan* (23 April 2000, p. 6).
57. Meek (1999, p.165-166).
58. United Nations (1998), and Makinano and Lubang (2000, p. 1).
59. Rizvi (2000).
60. Der Ghougassian and Lapieza Spota (1999). The author would like to thank Pablo Dreyfus for bringing this source to his attention.

## 2 Bibliography

- Nezavisimoe Voennoe Obrozrenie . 2000. 'Territorial FSS Departments Try to Suppress Illegal Arms Sales.' No. 14. (Agency WPS, 25 April).
- Allen, Robin. 2000. 'President Fires a Warning Shot Across Yemenis' Guns and Drugs Culture.' *Financial Times* . 12-13 February.
- Alpers, Philip. 1997. *Gun Policy Database*. 26 August.
- Baltimore Sun* . 2000. 'Kazakhstan Says There is No Inventory of Country's Weapons.' 15 June.
- Batchelor, Peter. 1996. 'Disarmament, Small Arms and Intra-State Conflict.' In Christopher Smith, Peter Batchelor and Jakkie Potgieter. *Small Arms Management and Peacekeeping in Southern Africa*. Geneva: United Nations Institute for Disarmament Research.
- Berman, Eric. 1996. *Managing Arms in Peace Processes: Mozambique* . Geneva: United Nations Institute for Disarmament Research.
- Bonn International Center for Conversion. 1999. *Conversion Survey 1999: Global Disarmament, Demilitarisation and Demobilization* . Baden-Baden: Nomos Verlagsgesellschaft.
- Booth, Ken. 1997. 'Security and Self: Reflections of a Fallen Realist.' In Keith Krause and Michael C. Williams, eds. *Critical Security Studies* . Minneapolis: University of Minnesota Press.
- Bureau of Alcohol, Tobacco and Firearms. 2000. *Commerce in Firearms in the United States*. Washington, DC: Department of the Treasury.

- Buzan, Barry. 1991. *Peoples, States and Fear*, 2nd Edition. Boulder, Colorado: Lynne Rienner.
- Canadian Firearms Centre. 1999. *Focus on Firearms*. Ottawa: Canadian Firearms Centre. 3 March.
- Caroll, Berenice A. 1968. *Design for Total War: Arms and Economics in the Third Reich*. The Hague: Mouton.
- Chachiuva, Martinho. 1999. 'The Status of Arms Flows in Mozambique.' In Tandeka Nkiwane et al., eds. *Weapons Flows in Zimbabwe, Mozambique and Swaziland*. ISS Monograph No. 34. Pretoria: Institute for Security Studies. January.
- Cock, Jacklyn. 1999. 'A Sociological Perspective on Small Arms Proliferation in South Africa.' In Jayantha Dhanapala et al., eds. *Small Arms Control: Old Weapons, New Issues*. Aldershot: Ashgate.
- Cook, Philip, and Jens Ludwig. 1997. *Guns in America: National Survey on Private Ownership and Use of Firearms*. National Institute of Justice Research Brief. Washington, DC: U.S. Department of Justice, Office of Justice Programs. May.
- Cooper, Neil. 2000. 'Arming and Disarming Kosovo: A Structural Arms Control Perspective.' Paper presented at Conference sponsored by the United Nations Research Institute for Social Development. Geneva, 26-30 June.
- Dupuy, Trevor. 1987. *Understanding War: History and the Theory of Combat*. San Francisco: Paragon.
- \_\_\_\_\_. 1990. *Attrition: Forecasting Battle Casualties and Equipment Losses in Modern War*. Fairfax, Virginia: Hero Books.
- Epstein, Joshua. 1988. 'Dynamic Analysis and the Conventional Balance in Europe.' *International Security*, Vol. 12, No. 4. Spring.
- Ezell, Edward Clinton. 1969. *The Search for a Lightweight Rifle: The M14 and M16 Rifles*. Ph.D. Dissertation. Pittsburgh, Pennsylvania: Case Western Reserve University.
- \_\_\_\_\_. 1986. *The AK-47 Story: Evolution of the Kalashnikov Weapons*. Harrisburg, Pennsylvania: Stackpole Books.
- \_\_\_\_\_. 1988. *Small Arms Today*, 2nd Edition. Harrisburg: Stackpole Books.
- Ezell, Virginia Hart. 1995. *Report on International Small Arms Production and Proliferation*. Alexandria, Virginia: Institute for Research on Small Arms and International Security.
- \_\_\_\_\_. 1998. 'Rumors of Colt's Death Exaggerated.' *National Defense*. October.
- \_\_\_\_\_. 1999. "'Less Weight" is the Mantra for Infantry Weapon Makers.' *National Defense*. September.
- \_\_\_\_\_. 2000. 'Arms Guru B-Day Offers Policy Forum.' *National Defence*. January.
- Hindustan. 2000. 'Frightful Web of Small Weapons.' 23 April, p. 6. (FBIS SAP-20000424000072).
- Gander, Terry J. 2000. *Jane's Infantry Weapons 2000-2001*. Coulsdon: Jane's Information Group.
- der Ghougassian, Khatchik and Hernan Lapieza Spota. 1999. 'Las armas livianas, la violencia y la seguridad: fundamentos y lineamientos para una investigacion.' Paper presented at the First Seminar on Security, Violence and Democracy. La Plata, Argentina, 10-11 August.
- von der Goltz, Colmar Freiherr. 1913. *The Nation in Arms*. Translated by Philip Ashworth. London: H. Rees.
- Gorjanc, Milan. 2000. 'Small Arms and Light Weapons and National Security.' Paper presented at the Workshop for Small Arms and Light Weapons. Ljubljana, 27 January.
- Gurr, Ted Robert. 2000. 'Ethnic Warfare on the Wane.' *Foreign Affairs*, Vol. 79, No. 3. May-June.
- Harding, Richard. 1996. *Numbers, Types and Distribution of Firearms in Australia, 1996*. Perth: University of Western Australia, Crime Research Centre. June.
- Hennop, Etienne. 2000. 'Illegal Firearms in Circulation in South Africa.' In Virginia Gamba, ed. *Governing Arms: The South African Experience*. Pretoria: Institute for Security Studies.
- Human Rights Watch. 1994. *Arming Rwanda: Arms Trade and Human Rights Abuses*. Vol. 6, No. 1. Washington, DC: Human Rights Watch.
- International Institute for Strategic Studies. 1987. *Military Balance 1987-88*. London: International Institute for Strategic Studies.
- \_\_\_\_\_. 1989. *The Military Balance 1989-90*. London: Brassey's.
- \_\_\_\_\_. 1990. *The Military Balance 1990-1991*. London: Brassey's.
- \_\_\_\_\_. 1999. *The Military Balance, 1999-2000*. Oxford: Oxford University Press.
- Interpol. 1994. *Third International Symposium on Firearms and Explosives*. Lyon, 7-9 September.
- Jett, Dennis. 1999. *Why Peacekeeping Fails*. New

- York: St. Martin's Press.
- Justitiedepartementet. 1999. Regeringens Proposition 1999/2000:27, En Skaerpt Vapenlagstiftning . Stockholm: Justitiedepartementet. 18 November.
- Kartha, Tara. 1998. Wars and Civil Society: The Rising Threat from Small Wars . PSIS Occasional Paper No. 2/1998. Geneva: Graduate Institute of International Studies, Programme for Strategic and International Security Studies.
- Makinano, Merliza and Alfred Lubang. 2000. 'Disarmament, Demobilization and Reintegration: the Mindanao Experience.' Paper presented at the RCSS Conference. Colombo, Sri Lanka, June.
- Mathiak, Lucy. 1997. 'The Light Weapons Trade at the End of the Century.' In Virginia Gamba, ed. Society Under Siege: Crime, Violence and Illegal Weapons . Pretoria: Institute for Security Studies.
- Meek, Sarah. 1999. 'New Democracies Under the Gun: Small Arms in Southern Africa.' In Abdel-Fatau Musah and Niobe Thompson, eds. Over a Barrel: Light Weapons and Human Rights in the Commonwealth . London: Commonwealth Human Rights Initiative.
- Mozambique Cease-Fire Commission. 1994. Final Report of the Chairman of the Cease-Fire Commission . 5 December.
- Nassauer, Otfried. 1995. 'An Army Surplus—the NVA's Heritage.' In Edward Laurance and Herbert Wulf, eds. Coping with Surplus Weapons . Brief No. 3. Bonn: Bonn International Center for Conversion.
- Rizvi, Shamim Ahmed. 2000. 'Government's "Arms Control" Campaign.' Pakistan and Gulf Economist. 18 September.
- Roberts, Adam. 1976. Nations In Arms . London: International Institute for Strategic Studies.
- Sadowski, Yahya. 1998. 'Ethnic Conflict: Think Again.' Foreign Policy , No. 111. Summer.
- Singh, Jasjit. 1995. 'Introduction.' In Singh, ed. Light Weapons and International Security . New Delhi: Pugwash Conferences and BASIC.
- Smith, Christopher. 1996. 'Light Weapons and the International Arms Trade.' In Christopher Smith, Peter Batchelor and Jackie Potgieter. Small Arms Management and Peacekeeping in Southern Africa . Geneva: United Nations Institute for Disarmament Research.
- \_\_\_\_\_. 1999a. 'Areas of Major Concentration in the Use and Traffic of Small Arms.' In Jayantha Dhanapala et al., eds. Small Arms Control: Old Weapons, New Issues . Aldershot: Ashgate.
- \_\_\_\_\_. 1999b. 'Light Weapons Proliferation: a Global Survey.' Jane's Intelligence Review . July.
- Sollenberg, Margareta, Peter Wallensteen and Andrés Jato. 1999. 'Major Armed Conflicts.' In Stockholm International Peace Research Institute. Sipri Yearbook 1999 . Oxford: Oxford University Press.
- Thomson, Harry C. and Lida Mayo. 1960. United States Army in World War II: The Technical Services: The Ordnance Department: Procurement and Supply . Washington, DC: Department of the Army, Office of the Chief of Military History.
- Africa Confidential. 1995. 'Underpaid, Underfed and Unruly.' Vol. 36, No.17. April.
- United Nations. 1997. Report of the Panel of Governmental Experts on Small Arms . A/52/298. 27 August.
- \_\_\_\_\_. 1998. United Nations International Study on Firearm Regulation. New York: United Nations.
- \_\_\_\_\_. 1999a. Small Arms: Report of the Secretary-General . A/54/404. 24 September.
- \_\_\_\_\_. 1999b. United Nations International Study on Firearm Regulation. On-line database. 30 August. <<http://www.uncjin.org/Statistics/firearms/index.htm>>
- United States Department of State. 1999. World Military Expenditure and Arms Transfers 1998 . Washington, DC: U.S. Department of State, Bureau of Arms.
- Vines, Alex. 1998. The Struggle Continues: Light Weapons Destruction in Mozambique . BASIC Occasional Papers No. 25. London: BASIC. April.
- Weigley, Russel. 1967. History of the United States Army . Bloomington, Indiana: University of Indiana Press.