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## Surplus Arms in South America

A Survey

*By Aaron Karp*



A Working Paper of the Small Arms Survey

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## About the author

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# Acknowledgements

How are small arms and light weapons distributed in South America? This report examines ownership among the armed forces, law enforcement agencies, and public in the 12 independent countries of the region. The project was made possible by a grant from the US Department of State, Office of Weapons Removal and Abatement.

The project was undertaken by the Small Arms Survey in cooperation with the Conflict Analysis Resource Center (CERAC) of Bogotá, Colombia. This report was written by Aaron Karp based on original research by Katherine Aguirre Tobón, Arturo Contreras, Pablo Dreyfus, Brodie Ferguson, Enrique Arbulú Obando, Yadaira Orsini, Carolina Sampó, Marcelo de Sousa Nascimento, Nicolás Urrutia, and Loreto Correa Vera. Aaron Karp would like to acknowledge the support and assistance of Jorge Restrepo, CERAC Director, Alessandra Allen and Tania Inowlocki, who edited the report, and Rick Jones, who laid it out.



# Methodology

The data in this report is derived from country submissions when possible, and estimates when necessary. Estimates are extrapolated from each country's identified procurement, highest modern personnel totals, and strategic doctrine. Except where noted, the military small arms and light weapons data presented here is not official, comprehensive, or conclusive; it is for general evaluation and comparison only. The complete methodology used here is described in Chapter 2 of the *Small Arms Survey 2006*.

*Small arms* are state-owned handguns, submachine guns, rifles, shotguns, and light and medium machine guns. *Firearms* are civilian-owned handguns, submachine guns, rifles, and shotguns.

# Overview

Long at the forefront of international small arms issues, public debate and activism in South America have largely focused on matters surrounding civilian firearms, estimated here to total between 21.7 and 26.8 million. The reasons for this civilian preoccupation are principally linked to chronic gun violence. South America has 14 per cent of the global population, and roughly 3.5 to 4 per cent of the world's civilian firearms, but it suffers from roughly 40 per cent of all homicides committed with firearms.

Military small arms are rarely part of public debate, largely because of a strong culture of national security secrecy in South America. But military small arms policy has attracted much closer scrutiny in recent years, especially as military small arms and light weapons are diverted to criminals and guerrillas, fuelling insurgencies and civil violence. This report focuses primarily on issues surrounding surplus military small arms and light weapons in the region. Law enforcement and civilian firearms inventories and issues are recognized here as well, to ensure a balanced overall perspective.

The region's military establishments do not have a strong record of identifying or eliminating their surplus small arms, light weapons, or ammunition. South America holds some of the world's largest military small arms and light weapons surpluses. Military inventories are not exceptionally large in absolute terms, but they are a major element in global surplus problems. Among the 12 independent countries of South America, there are an estimated 3.6 million military small arms as of 2007, 1.5 per cent of the global total. Of these, approximately 1.3 million, more than one-third, are surplus.

## Summary recommendations

- The formal small arms and light weapons requirements of South American active-duty forces should be available to national civilian leaders and the public.

- Inventories of military small arms and light weapons, including obsolescent small arms, and ammunition should be made publicly available.
- Reserve forces should be kept at the lowest levels possible to avoid exaggerating military small arms and light weapons requirements.
- Excess military small arms, light weapons, and ammunition should be destroyed under civilian supervision and public scrutiny.
- Countries where surplus military small arms destruction is a special priority include Argentina, Brazil, Chile, Guyana, Paraguay, and Peru.
- Older-generation man-portable air defence systems (MANPADS) should be destroyed. Storage of newer MANPADS should be made highly secure and accountable.
- Countries where MANPADS destruction is a special priority include Argentina, Ecuador, and Peru.

## Summary findings

**What creates surpluses?** The greatest force reducing demand for military small arms in South America is the decline in the size of the region's armed forces. Most of its military surpluses are the unintended result of force reduction.

Further reductions in military personnel are to be expected. Potentially harmful effects can be anticipated: surpluses can be secured and destroyed systematically to prevent theft and resale.

**What is the greatest threat posed by a surplus of military small arms?** The greatest threat posed by surplus small arms in South America is not war between states but civil violence, especially crime. Surplus military small arms are most dangerous when sold or lost to civilians.

**How much is surplus?** Of a total of approximately 3.6 million modern military small arms in South America as of 2007, the region's armed forces have legitimate requirements for as many as 2.3 million, as summarized in Table 1 and listed in more detail in Table 2.

The remaining 1.3 million military small arms are indisputably superfluous to any reasonable military requirement. Surpluses may be even higher if less generous standards are applied to military requirements.



Regional armed forces usually are unwilling to acknowledge surplus weapons and ammunition, viewing excess as a national security asset.

**Which countries have surplus small arms?** Three-quarters of South America's surplus is located in two countries: Argentina and Brazil. Argentina alone is home to an estimated 552,000 unneeded military small arms (425,000 modern), the region's largest absolutely and second-largest proportionately. Brazil, Chile, and Peru also have exceptionally large surplus stockpiles in absolute terms, but they do not approach Argentina proportionately.

Argentina stands out partially because it has reduced its armed forces more than any other country in the region. Unlike many of its neighbours, Argentina does not conceal its surpluses behind an inflated reserve system. If other countries were equally frank, the regional surpluses would be substantially larger and more equally distributed.

Massive force cuts have left Guyana unable to make reasonable use of roughly 83 per cent of the weapons in its arsenal, proportionately the largest surplus in South America. While Argentina has the ability to flood local, regional, and even international markets, the much smaller Guyanese surplus is a threat to Guyana and its immediate neighbours.

Personnel cuts and modernization have created military surpluses of roughly 50 per cent or more of their military totals in Chile, Ecuador, Paraguay, and Suriname. If obsolescent weapons were included, these proportions would be even higher.

The total number of older weapons acquired—such as bolt-action rifles and revolvers—can be estimated, but sell-offs and decades of attrition make it much more difficult to evaluate the number remaining.

**What is the role of reserves?** The easiest way for military institutions to justify retention of surpluses is to claim them for reserve organizations. Large reserve organizations—which in South America often only exist on paper—conceal military small arms surpluses.

There is no direct evidence of countries exaggerating their reserves specifically to justify large material requirements. But in many cases—Brazil, Ecuador, and Paraguay among them—reserves increased as active personnel declined. Whether by design or effect, inflating reserves justifies keeping equipment that otherwise should be eliminated.

The worst example is Venezuela, which recently established a Territorial Guard with a goal of 1.5 million members. Even if never completed, this creates a permanently unfulfilled requirement for small arms, ensuring that Venezuela will never be compelled to declare any of its official weapons surplus. Venezuela is unlikely to destroy weapons until the role of the Territorial Guard is refined and effectively demilitarized.

**What role does military autonomy play?** For international small arms policy-making, the most important operational consideration in seeking cooperation for military surplus destruction is the traditional autonomy of South American military institutions.

Throughout South America, small arms and light weapons policy tends to be controlled by the armed services. Civilian officials in the defence ministry or chancellery usually are unfamiliar with the issues and lack access to crucial information, which is controlled by the armed services. Outside actors seeking

**Table 1 Estimated South American military small arms and surpluses, 2007**

	Total modern small arms	Current small arms requirement	Surplus small arms
Argentina	550,000	127,000	425,000
Bolivia	67,000	66,000	1,000
Brazil	1,330,000	873,000	458,000
Chile	408,000	193,000	214,000
Colombia	600,000	535,000	66,000
Ecuador	134,000	68,000	66,000
Guyana	19,000	3,200	15,500
Paraguay	40,000	16,500	23,700
Peru	201,000	120,000	83,000
Suriname	7,000	3,700	3,300
Uruguay	60,800	46,500	14,000
Venezuela	281,000	281,000	0

**Note:** Totals do not add precisely due to rounding.

**Sources:** Table 2 (below) and the country chapters of this project

Table 2 Estimated South American military small arms, requirements, and surpluses, by country and service

	Service branch	Peak year	Peak personnel	Small arms multiplier	Peak small arms	Current personnel	Current small arms requirement	Surplus small arms	Per cent surplus
<b>Argentina</b>	Army	1981	130,000	2.5	325,000	44,585	111,500	213,500	66%
	Navy	1981	36,000	0.5	18,000	17,914	9,000	9,000	50%
	Air force	1979	20,000	0.5	10,000	13,613	6,800	3,200	24%
	Reserves	1988	377,000	1.2	200,000	0	0	200,000	100%
	<b>Total</b>		<b>563,000</b>		<b>550,000</b>	<b>76,112</b>	<b>127,000</b>	<b>425,000</b>	<b>77%</b>
<b>Bolivia</b>	Army	2007	25,000	2.5	62,500	25,000	62,500	0	0%
	Navy	1992	4,500	0.5	2,250	3,500	1,750	500	22%
	Air force	1976	4,000	0.5	2,000	3,000	1,500	500	25%
	Reserves (obsolescent)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	<b>Total</b>		<b>33,500</b>		<b>67,000</b>	<b>31,500</b>	<b>66,000</b>	<b>1,000</b>	<b>1%</b>
<b>Brazil</b>	Army	2007	238,000	1.3	309,000	221,800	294,000	15,600	5%
	Navy and marines	1998	68,250	1.0	68,000	62,300	59,000	9,000	13%
	Air force	2008	66,900	0.6	40,000	67,400	40,000	0	0%
	Reserves	2008	1,340,000	0.68	914,000	400,000	480,000	434,000	47%
	<b>Total</b>		<b>1,700,000</b>		<b>1,330,000</b>	<b>750,000</b>	<b>873,000</b>	<b>458,000</b>	<b>34%</b>

	Service branch	Peak year	Peak personnel	Small arms multiplier	Peak small arms	Current personnel	Current small arms requirement	Surplus small arms	Per cent surplus
<b>Chile</b>	Army	1985	57,000	2.5	142,500	47,700	119,250	23,250	16%
	Navy	1995	31,000	0.5	15,500	19,398	9,699	5,801	37%
	Air force	1981	15,000	0.5	7,500	8,600	4,300	3,200	43%
	Reserves	1975	160,000	1.2	192,000	50,000	60,000	132,000	69%
	Obsoloescent	n/a	n/a	n/a	50,000	n/a	0	50,000	n/a
	<b>Total</b>			<b>263,000</b>		<b>408,000</b>	<b>125,698</b>	<b>193,000</b>	<b>214,000</b>
<b>Colombia</b>	Army	2007	178,000	2.5	445,000	178,000	445,000	0	0%
	Navy	2007	22,000	0.5	11,000	22,000	11,000	0	0%
	Air force	2007	8,600	0.5	4,300	8,600	4,300	0	0%
	Reserves	1985	116,600	1.2	139,920	61,900	74,280	65,640	47%
	<b>Total</b>		<b>325,200</b>		<b>600,000</b>	<b>270,500</b>	<b>535,000</b>	<b>66,000</b>	<b>11%</b>
	<b>Ecuador</b>	Army	1990	50,000	2.5	125,000	38,000	63,000	62,000
Navy	2007	5,500	5,500	0.5	6,740	5,500	2,750	3,990	59%
Air force	1980	4,800	4,800	0.5	2,400	4,000	2,100	300	0%
Reserves	2007	118,000	118,000	1.2	n/a	118,000	n/a	n/a	n/a
<b>Total</b>			<b>178,300</b>		<b>134,000</b>	<b>165,500</b>	<b>68,000</b>	<b>66,000</b>	<b>49%</b>

	Service branch	Peak year	Peak personnel	Small arms multiplier	Peak small arms	Current personnel	Current small arms requirement	Surplus small arms	Per cent surplus
<b>Guyana</b>	Army	1985	6,000	2.5	15,000	900	2,250	12,750	85%
	Navy	1985	300	0.5	150	100	50	100	67%
	Air force	1985	300	0.5	150	100	50	100	67%
	Reserves	1986	3,000	1.2	3,600	670	804	2,796	78%
	<b>Total</b>		<b>9,600</b>		<b>19,000</b>	<b>1,770</b>	<b>3,200</b>	<b>15,500</b>	<b>83%</b>
<b>Paraguay</b>	Army	1995	15,000	2.5	37,500	6,000	15,000	22,500	60%
	Navy	1995	3,600	0.5	1,800	1,800	900	900	50%
	Air force	1995	1,700	0.5	850	1,050	450	300	35%
	Reserves	1995	164,500	1.2	n/a	164,500	n/a	n/a	n/a
	<b>Total</b>		<b>184,800</b>		<b>40,000</b>	<b>8,850</b>	<b>16,500</b>	<b>23,700</b>	<b>58%</b>
<b>Peru</b>	Army	1985	85,000	2.5	159,347	40,000	100,000	59,347	37%
	Navy	1985	27,000	0.5	22,273	25,000	12,500	10,773	48%
	Air force	1985	16,000	0.5	19,269	15,000	7,500	12,969	68%
	Reserves	1987	188,000	1.2	n/a	188,000	n/a	n/a	?
	<b>Total</b>		<b>316,000</b>		<b>201,000</b>	<b>268,000</b>	<b>120,000</b>	<b>83,000</b>	<b>41%</b>

	Service branch	Peak year	Peak personnel	Small arms multiplier	Peak small arms	Current personnel	Current small arms requirement	Surplus small arms	Per cent surplus
<b>Suriname</b>	Army	1988	2,700	2.5	6,750	1,400	3,500	3,250	48%
	Navy	1989	250	0.5	125	240	120	5	4%
	Air force	2000	200	0.5	100	200	100	0	0%
	Reserves	n/a	0	1.2	0	0	0	0	0%
	<b>Total</b>		<b>3,150</b>		<b>7,000</b>	<b>1,840</b>	<b>3,700</b>	<b>3,300</b>	<b>47%</b>
<b>Uruguay</b>	Army	1983	22,300	2.5	55,750	17,000	42,500	13,250	24%
	Navy	1985	6,600	0.5	3,300	5,000	2,500	800	24%
	Air force	1990	3,500	0.5	1,750	3,100	1,550	200	11%
	Reserves	n/a	0	1.2	0	0	0	0	0%
	<b>Total</b>		<b>32,400</b>		<b>60,800</b>	<b>25,100</b>	<b>46,500</b>	<b>14,000</b>	<b>23%</b>
<b>Venezuela</b>	Army	2007	62,000	1.7	107,000	62,000	107,000	0	0%
	Navy	2001	18,300	1.5	28,000	18,000	28,000	0	0%
	Air force	2007	10,600	1.4	16,000	10,600	15,500	0	0%
	National Guard	2007	36,000	2.0	72,000	36,000	72,000	0	0%
	National Reserves	2007	17,000	1.2	23,000	17,000	23,000	0	0%
	Territorial Guard	2008	n/a	n/a	35,000	n/a	35,000	0	0%
	<b>Total</b>		<b>145,000</b>		<b>281,000</b>	<b>145,000</b>	<b>281,000</b>	<b>0</b>	<b>0%</b>

Note: Totals do not add precisely due to rounding.

to influence ordnance policy may find that this degree of military autonomy elevates the importance of seemingly secondary issues of protocol and appearance.

That said, this project uncovered no evidence that countries with highly autonomous militaries are less likely to identify and destroy their surpluses. Bolivia shows that the armed forces actually may support surplus destruction more than civilian leaders.

Military autonomy is neither a curse nor a blessing for surplus small arms, light weapons, or ammunition destruction. Rather, it is an underlying condition, pointing to the need to identify the appropriate contact person.

**Are obsolescent weapons discarded?** As researchers found in several country studies commissioned by this project, South American armed forces tend to keep everything, with a reputation of squirreling away any aging but conceivably useful equipment. The warehouses maintained by many South American militaries are a direct reflection of traditional national security thinking. Large numbers of Mauser 95 and 98 bolt-action rifles and lesser quantities of US M1 Garand rifles and Browning machine guns are common throughout the region.

**Is attrition properly understood?** A major shortcoming of small arms research is the poor understanding of attrition. What proportion of a typical military arsenal is declared irreparably broken every year, or every decade? What proportion becomes permanently unserviceable, and how much typically is lost?

Only a few South American countries have clearly discussed their attrition. Examples include Chile's disposals of antiquated Mauser rifles, mostly to private collectors; Colombia's transfers of some of its excess G3 automatic rifles to Ecuador; and Peru's unique data on unserviceable military small arms.

**How are legitimate requirements calculated?** Where actual procurement quantities and current military requirements are unknown, these have been estimated, usually on the basis of 2.5 small arms per person in uniform. This is a very high rate compared to other countries with known requirements. It is used here to establish a maximum threshold for legitimately justifiable requirements.

In practice, most South American ground forces would be more appropriately armed at the levels closer to constabulary forces, namely 1.8 small arms per soldier and marine.

Table 3 **Publicly reported South American MANPADS\***

Recipient	Supplier	Designation	Number ordered	Year ordered	Year delivered	Grip stocks/ launchers
Argentina	Britain	Blowpipe	(8)	1981	1981	?
	Bulgaria	SA-7 Grail	(50)	1983	1983	(10)
	Peru	SA-7 Grail	(120)	1982	1982	(40)
	Sweden	RBS-70	(30)	(1983)	1984	?
Bolivia	China	HN-5A	(28)	1992–95	(1995)	?
Brazil	France	Mistral	(160)	1994	1994–97	?
	Russia	SA-18 Iгла	112+	1994	1994–96	56
Chile	Britain	Blowpipe	48	1982	1982	8
	Britain	Blowpipe	(50)	(1983)	1983	?
	Britain	Blowpipe	50	(1987)	1988	?
	France	Mistral	(750)	1989	1991–97	(24)
Colombia	France	Mistral	(48)	1980s	1980s	16
Ecuador	Britain	Blowpipe	150	?	?	?
	France	Mistral	?	?	?	4
	Russia/ USSR?	SA-7 Grail	20+	?	?	?
	Russia/ USSR?	SA-16 Gimlet	20+	?	?	?
	Russia	SA-18 Iгла	222	1997	1998	14
Peru	Britain	Javelin	200–500	1995	1995	?
	Bulgaria	SA-16 Gimlet	417	(1994)	1994–96	56
	Nicaragua	SA-16 Gimlet	216	1992	1992–93	72
	USSR	SA-7 Grail	(500)	(1978)	1978–81	?
Venezuela	France	Mistral	?	?	?	?
	Russia	SA-24	(50)		2008–09	?
	Sweden	RBS-70	(200)	1989	1990–91	?
	Sweden	RBS-70	(200)	1999	2000–01	?

**Note:** \* Estimates in parentheses.

**Sources:** SIPRI (2008); *Forecast Associates* (2000); *Air Fleet Journal* (2005); IISS (2007); Stefanoni (2005); and the country chapters of this study



These estimates have been designed to overestimate equipment levels. For ground forces, the dominant user of small arms among the armed forces, requirements are based on the highest small arms multiplier, 2.5 weapons per soldier. This multiplier is comparatively high, associated with Cold War-era armed forces planning for high-tempo conventional warfare.

## MANPADS in South America

A review of publicly available sources indicates there are a total of approximately 3,700 MANPADS interceptor missiles and some 300 grip stocks or launchers in South America (see Table 3). This figure is part of a global total commonly estimated to include 500,000–700,000 missiles and some 100,000 grip stocks and launchers. This suggests that South America is home to roughly one-half of one per cent of the world's MANPADS missiles and one-third of one per cent of all launchers (Small Arms Survey, 2004, pp. 77 and 83).

The region's MANPADS are distributed among eight countries. The largest inventories belong to Peru, followed by Chile, with Ecuador narrowly in third place.

Elimination of older MANPADS should be a high priority for regional destruction programmes, as should enhancing the security of arsenals of newer weapons. 🇺🇸

# Country summaries

## Argentina

As a result of the last dictatorship and of the disastrous experience of the 1982 Malvinas/Falklands War, public confidence in Argentina’s military institutions and competence severely eroded. Of greatest importance for this analysis, public distrust and the rise of democracy led to massive cuts in military personnel, creating an unprecedented small arms and light weapons surplus.

From a generous pre-war requirement of approximately 550,000 modern small arms and light weapons, the three armed services have seen their com-

Table 4 **Estimated total small arms, firearms, and surpluses in Argentina, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Armed forces			555,000	425,000
	Air force	10,000		
	Army	325,000		
	Navy	18,000		
	Reserves	0		
Obsolescent military		200,000?		
Law enforcement			270,000	30,000
Civilian			1,900,000–4,600,000	
	Legal	1,200,000–2,600,000		
	Illegal	700,000–2,000,000		
<b>Total</b>			<b>2,700,000–5,300,000</b>	<b>455,000</b>

bined need decline to no more than an estimate of 127,500 weapons. Approximately 425,000 small arms have become superfluous.

Argentina's use of MANPADS in the Malvinas/Falklands did much to publicize their capabilities. Small quantities of British Blowpipes were acquired before, and much larger numbers of SA-7s were received from at least two sources during and immediately after the conflict, along with RBS-70s. Since military spending quickly dropped thereafter, there is no reason to suspect large purchases of more modern varieties.

Argentina's armed forces are now less than one-third the size of the nation's law enforcement agencies, which have a combined total of 241,364 sworn officers. Their small arms requirements now surpass the armed forces in quantity, but do not match them in firepower.

As of 2006 there were 1,185,467 civilian-owned firearms registered in Argentina. These belonged to 569,979 individual owners. As recently as 2001, however, the government reported 2,597,122 registered civilian weapons. Unregistered guns are estimated by various observers at roughly 700,000 to 2 million illegal arms, for a combined total of 1.9 to 4.6 million civilian firearms.

**Introduction:** Following the last dictatorship and the 1982 Malvinas/Falklands War, acceptance of military rule collapsed. Restoration of democracy culminated in the election of Raúl Alfonsín as president, sworn in on 10 December 1983.

**Armed forces:** Argentina has the best-documented record of official small arms and light weapons procurement in South America, having acquired at least 586,000 since 1942.

Public anger after 1982 led to massive reductions in military personnel, creating an unprecedented small arms and light weapons surplus. Reductions accelerated in 1994, when President Carlos Saúl Menem began complete military professionalization. In all, combined military strength dropped from 485,000 personnel (active and reserve) to 76,112 today.

Cutbacks generated a surplus of at least 400,000 small arms and light weapons. Roughly half are obsolescent bolt-action rifles. The rest are more modern semi- and fully automatic weapons. Increasing numbers of the latter have been seized from criminals in Argentina and neighbouring countries.

**MANPADS:** As the second country to make significant use of MANPADS (after their initial appearance in North Vietnamese hands in 1972–75), Argentina made a major contribution to broader awareness of their dangers. In the 1982 Malvinas/Falklands War, British troops fired 95 Blowpipes to bring down 9 Argentine aircraft. Argentine Blowpipes destroyed a British Harrier jet and two helicopters. All known MANPADS were acquired shortly before or shortly after the war. There is no evidence the country has been in the market for additional systems since the Malvinas/Falklands War era.

**Law enforcement:** The armed forces are now less than one-third the size of the nation’s law enforcement agencies, which have a combined total of 241,364 sworn officers. Of the latter, 207,099 belong to the national and provincial police. Their small arms requirements now surpass the armed forces in quantity.

**Civilian ownership:** As of 2006 there were 1,185,467 civilian-owned firearms registered in Argentina. Unregistered guns are estimated by various observers and surveys at roughly 700,000 to 2 million illegal arms.

**The National Plan of Disarmament:** On 20 December 2006 Argentina’s Congress passed the National Plan of Disarmament, based on the Brazilian model. The plan declared a national emergency to promote firearms registration, security enhancement, and inventory reductions. From October 2007 to April 2008, more than 82,000 guns were voluntarily delivered for destruction.

Table 5 **Publicly reported Argentine MANPADS\***

Supplier	Number ordered	Designation	Year ordered	Year delivered	Grip stocks/ launchers
Bulgaria	(50)	SA-7 Grail	1983	1983	(10)
Britain	(8)	Blowpipe	1981	1981	?
Peru	(120)	SA-7 Grail	1982	1982	(40)
Sweden	(30)	RBS-70	(1983)	1984	?

**Note:** \* Estimates in parentheses.

**Sources:** SIPRI (2008); IISS (2007)

## Bolivia

Bolivia's recent army expansion probably has exhausted inventories of modern equipment. While enlistments reportedly increased army personnel to 30,000, there is no evidence of comparable weapons purchases.

Because of recent expansion, even if only in authorized strength, the army can credibly deny surpluses. The air force and navy appear to have small surpluses. When Bolivian commanders speak of reserves, they seem to mean not reserve personnel but obsolescent weapons. The vintage military arsenal could number roughly 30,000 small arms, some of which might have been lost through breakage, returned to suppliers, loaned to the police, exported, or stolen.

The scale of police armament has become obscured due to proliferation of elite units. The new elite groups have clear anti-crime mandates, but the timing of the creation of these units also suggests political motives for President Evo Morales.

While Bolivia is committed to international consensus on small arms issues, its government has been hesitant to act on domestic firearms proliferation. Bolivia lacks a law regulating civilian ownership. Efforts to pass one have stalled since 2002.

**Introduction:** Bolivia is the poorest country of South America, a problem compounded by political instability. The guerrilla movements of the 1960s and 1970s have given way to rampant crime and political violence.

Extreme ethnic tensions, regional separatism, declining social order, organized crime, and cocaine trafficking make Bolivia increasingly violent. Yet gun violence remains limited, probably due to poverty and a tight supply of firearms.

**Armed forces:** Bolivia's armed forces have been deeply affected at three key junctures in the last 25 years. The first was the Democratic Restoration of 1982, which led to an unprecedented division between the armed forces and civilian rulers from 1982 to 1993. Additional guidance comes from a handbook on the use of force during internal conflicts. Approved during the administration of Carlos Mesa Gisbert on 14 January 2005, the volume limits the role of the armed forces in civil conflict, with the explicit goal of restraining the military in incidents such as the 2003 Gas War.

Table 6 **Estimated total small arms, firearms, and surpluses in Bolivia, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Armed forces			67,000	1,000
	Air force	2,000		
	Army	62,500		
	Navy	2,000		
Obsolescent military		30,000?	30,000	30,000?
Law enforcement		36,000	36,000	0
Civilian total		260,000	260,000	
<b>Total</b>			<b>395,000</b>	<b>31,000</b>

Territorial disputes with Chile and Paraguay, coupled with resurgent nationalism, have been used to justify the recent expansion of the armed forces. In reality, at least three-quarters of military personnel remain in urban cantonments, evidence that domestic security remains the real strategic priority.

Growth of the armed forces creates requirements for additional small arms and light weapons. Consequently, Bolivian officials are unlikely to acknowledge significant reserves of modern equipment. The Bolivian estimate is simplified by the lack of formal reserves. When Bolivian commanders speak of reserves, they seem to mean bolt-action Mausers and possibly older FAL automatic rifles.

With roughly two generations of obsolescent stocks, Bolivia’s vintage military arsenal may outnumber its modern inventory. These weapons might be a suitable start for destruction activities.

**MANPADS:** The best-known small arms destruction incident in South America involved 28 HN-5 MANPADS transferred to the United States for destruction in 2005. Disclosure of the agreement was used by President Morales to rally nationalist, anti-US support, and to punish the military. Since then, photographs have shown additional HN-5s under Bolivian military control.

**Law enforcement:** With 23,800 sworn officers, the Bolivian police are about two-thirds as numerous as the army and probably control about half as many

small arms and light weapons. Much of the newest and best police equipment is controlled by the numerous elite units created since Morales came to power.

**Civilian firearms:** For want of official data, estimates of civilian gun ownership rely on parametric modelling, yielding a high-confidence estimate of approximately 260,000 firearms in civilian hands. Equivalent to 2.5 guns per 100 residents, this is a low level by international standards, almost certainly the lowest level of ownership in South America.

## Brazil

In response to cuts in the army, Brazilian military small arms requirements fell from 1.1 million in 1989 to about 840,000 today, leaving at least 24 per cent of military small arms excess.

Great uncertainty regarding Brazilian military requirements comes from its reserve system. Some 1.3 million strong on paper, this massive reserve functions as a weapons sink, allowing leaders to plausibly deny the existence of surplus weapons, since any excess can be absorbed by reserves. If all but first-line reserves are discounted, the situation is very different, leaving Brazil with a total military requirement for no more than 873,000 small arms and leaving at least 458,000 surplus.

A large proportion of this surplus consists of obsolescent weapons, especially Mauser rifles, revolvers, and older submachine guns. Procured for a pre-modernization force of 300,000 uniformed personnel, obsolescent weapons constitute about half the total surplus of the Brazilian military. Theft and diversion of military and law enforcement armaments are major problems. The situation is most serious around Rio de Janeiro, where the armed services concentrate major bases, but the problem is nationwide.

Brazil's civilian ownership is the most dynamic sector examined in this study. Registered civilian firearms number approximately 5.2 million. The total for illicitly held firearms is roughly 4.4 million, following destruction of 1.2 million seized crime guns and voluntarily surrendered firearms since 2000. This was the largest systematic civilian weapons destruction programme anywhere, and one of the largest of any type since the end of the cold war.

Table 7 **Estimated total small arms, firearms, and surpluses in Brazil, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Armed forces			1,330,000	458,000
	Air force	40,000		
	Army	309,000		
	Navy and marines	68,000		
	Reserves	914,000		
Law enforcement			643,000	
Civilian total			9,600,000	
	Legal	5,240,000		
	Illegal	4,400,000		
<b>Total</b>			<b>11,575,000</b>	<b>458,000</b>

**Introduction:** Facing some of the world’s worst homicide and crime problems, Brazil moved to the forefront of international efforts to deal with firearms proliferation. The Disarmament Statute of 2003 was far from fully successful—a referendum intended to end most civilian gun ownership failed—but still led to radical changes in gun ownership and ushered in a significant reduction in violence.

The security of official small arms and light weapons is part of the nation’s violence problem. Poor security and corruption lead to widespread diversion of official weapons into criminal hands. Nevertheless, the armed forces and law enforcement agencies have not been a major part of domestic arms control.

**Armed forces:** With more than 351,500 active troops, Brazil has the largest armed forces in South America. The number of active military personnel has declined gradually in the last two decades. Army force levels peaked in the 1980s.

Brazil has by far the largest military small arms inventory in South America, but officials deny their armed forces have surplus weapons. According to interviewees, even known surplus weapons are rarely destroyed. Instead, surpluses are stockpiled for reserves.



**Reserves:** The greatest source of uncertainty regarding Brazilian military small arms requirements arises from its massive reserve structure. On paper, this entity has more than 1.3 million personnel. In reality, only 400,000 are first-line reserves, with weapons available.

If secondary reserves are discounted, the situation is very different. Instead of a requirement for 1.7 million small arms for 1.3 million personnel, the Brazilian armed forces have a justifiable need for no more than 873,000 military small arms and light weapons for some 750,000 men and women. Current military inventories include at least 458,000 small arms the armed services are unable to use. Roughly half of these are obsolescent, vintage small arms.

**MANPADS:** Brazil was late to invest in MANPADS and still appears to rely on them for relatively specialized functions.

Brazil has reported 160 Mistral interceptors bought from France between 1994 and 1997 for the navy and marines. The Mistrals are normally kept in shore installations. Russian sources report that Brazil bought 112 SA-18 Iгла missiles and 56 launchers in 1994 for its army and air force infantry. MANPADS are concentrated among the army's First Anti-Aircraft Artillery Brigade and some infantry units such as the 12th Light Infantry Brigade, the Parachutist Brigade, and the 9th Infantry Brigade.

**Law enforcement:** Brazil's law enforcement agencies are estimated to have a combined total of 643,000 firearms, including large numbers of automatic rifles and submachine guns.

**Security:** The security of Brazilian official small arms is a problem for the armed forces and law enforcement agencies. Corruption leads to substantial leakage of military and police small arms and ammunition. Weapons such as grenades, FAL and H&K rifles, and AT4 rocket launchers are especially prized on the black market.

**Civilian ownership:** Civilian gun deaths peaked in 2003, when 39,325 people were reportedly killed by firearms, 90 per cent in homicides. Proportionately, this was the fourth-highest rate of gun-related death in the world, and triple Brazil's gun death rate in 1982.

The Disarmament Statute signed by President Lula da Silva on 23 December 2003 transferred control over civilian small arms from Brazilian states to the Federal Police.

Civilian ownership today is estimated at 9.6 million. This is after destruction of 748,000 seized crime guns and 471,873 that were handed in voluntarily. Gun death rates have fallen by 25 per cent since the implementation of the Disarmament Statute.

## Chile

The Chilean army modernized more regularly than most others in the region, largely because of the famous Copper Law of 1958. The extra income helped the army replace its infantry equipment more rapidly than would otherwise have been possible, with six generations of automatic rifles since 1960.

The methodology used in this study yields a conservative total Chilean military small arms inventory of 358,000 modern weapons. Circumstantial evidence suggests that much of this equipment is allocated for reserves. Since Chilean reserves have dropped significantly, this allocation disguises what actually is a large surplus inventory. Discounting reserves, the Chilean army surplus amounts to more than 45 per cent of the modern inventory.

Actual Chilean inventories and surpluses are probably much higher. Since small arms for active-duty personnel were replaced roughly every decade, the total number of army automatic rifles could easily total 200,000 or more. With other weapons—such as side arms, machine guns, grenade launchers, and sniper rifles—the total inventory could number more than 300,000 small arms for the army alone.

While previous generations of Chilean military small arms are relatively well understood—from Mannlicher to Mauser to Garand rifles—their status today is unclear. Not only did Chile acquire a large number of older guns, but it also exported a large proportion. This research finds that roughly one-third (50,000) remain in the country.

Private Chilean gun ownership is even more difficult to assess. There are 737,980 legally registered private firearms in Chile. Estimates of illegal ownership range from 80,000 to 2 million. For the purposes of this analysis, statistical

Table 8 **Estimated total small arms, firearms, and surpluses in Chile, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Armed forces			408,000	164,000
	Air Force	8,000		
	Army	143,000		
	Navy	16,000		
	Reserves	192,000		
Military obsolescent		50,000?		50,000?
Carabineros			60,000	0
Investigative police			6,000	0
Civilian total			1,500,000– 2,000,000	
	Legal	738,000		
	Illegal	750,000– 1,300,000		
<b>Total</b>			<b>2,000,000– 2,500,000</b>	<b>214,000</b>

outliers are disregarded, reducing the estimated range to 750,000–1.3 million illegal firearms in Chile.

**Introduction:** In contrast to most of the continent, Chile has not been affected in recent years by major problems of criminal violence, armed insurgencies, or military unrest. There is relatively little discussion of small arms issues. As a study put it in 2003, ‘the question of small arms is not a priority in Chilean society’ (Dreyfus et al., 2003, p. 39). But contrary to widespread impressions within Chile, both the armed forces and Chilean civilians have massive holdings.

**Armed forces:** The army has procured several generations of automatic rifles, beginning with the Belgian FAL and Swiss Stgw 510 in the 1960s, supplemented with the German G3 and the US M16 in the 1970s, before converting to the Stgw 540 in the 1980s, the Stgw 550 in the 1990s, and recently ordering the G36. These acquisitions are a consequence of expansion in the 1960s and

1970s as well as of independent income from the Copper Law. One result is a remarkably rich and complicated inventory, a kind of weapons zoo that regularly must drive Chilean Army armourers to apoplexy.

The personnel strength of all major Chilean armed services declined in recent years. One outcome is a large inventory of excess equipment, probably the second largest in South America after Argentina.

**Reserves:** Chilean reserves do not drill routinely. From 160,000 personnel in the 1970s, the reserve element has declined to a titular strength of 50,000 today, further reducing military small arms requirements.

Discounting reserves, the Chilean army surplus amounts to more than 45 per cent of the modern small arms inventory, and 100 per cent of the obsolescent inventory.

**MANPADS:** Less is known about Chilean MANPADS than those of any other country in the region. Chile appears to have a large inventory, probably the second-largest on the continent after Peru, dominated by some 750 Mistral interceptors acquired from France in the early to mid-1990s. The country also has smaller quantities of British-supplied Blowpipes and possibly Javelins.

**Surplus destruction:** Current military surplus destruction is trivial, limited to unrepairable weapons. In 2006, the army destroyed 144 guns. By comparison, destruction of civilian firearms eliminates several thousand guns annually.

**Civilian firearms:** There are 737,980 registered private firearms in Chile, among 457,000 licensed owners. There is an enormous degree of uncertainty over illegal gun ownership. The most reliable estimates of unregistered civilian guns number between 750,000 and 1.3 million.

## Colombia

This project documents military acquisition of 343,621 modern small arms in Colombia. It also finds that approximately 190,000 more have been acquired, for a total of roughly 535,000 military small arms in current inventories.

The greatest pressure for acquisition of military small arms in Colombia comes from its two major insurgencies and cocaine trafficking. These factors

have pushed the armed forces from 60,000 personnel in the 1970s to approximately 230,000 today. There are 208,600 active soldiers, sailors, and air force personnel, as well as 21,000 village militia members. Continuous expansion of material requirements means that Colombia does not have a major small arms surplus.

Requirements may be padded, but it would be difficult to convince Colombian leaders that their forces were overstocked. Until domestic security improves enough to allow significant troop cuts, surplus destruction will tend to be marginal. More has been accomplished through activities such as the partial disarmament of the Autodefensas Unidas de Colombia (AUC),

**Table 9 Estimated total small arms, firearms, and surpluses in Colombia, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Armed forces			535,000	
	Air Force	4,000		
	Army	445,000		
	Navy	11,000		
	Reserves	74,000		66,000
Military obsolescent		80,000?	80,000?	80,000?
AUC (paramilitaries)			unknown	17,000*
ELN and FARC (guerillas)			unknown	
National police			66,000	0
Other law enforcement			28,000	0
Civilian total			1,500,000–3,100,000	
	Legal	706,000		
	Illegal	800,000–2,400,000		
<b>Total</b>			<b>2,200,000–3,800,000</b>	<b>135,000</b>

**Note:** \* The AUC surplus is limited to weapons surrendered to the Colombian state.

which put 17,000 small arms in storage. The decline of reserves, along with AUC disarmament and obsolescent arms believed to be in storage, have produced the only significant official Colombian small arms and light weapons surplus.

The situation is much different for law enforcement agencies, which face a weapons shortage. The national police reports owning 65,800 small arms for its 127,500 sworn officers, just over 0.5 per officer. While the national police cannot issue each officer his or her own weapon, other Colombian law enforcement agencies appear to be much better equipped.

As for civilians, Colombia registered a total of 706,210 firearms in 2005. Despite a strict regulatory regime, there are many unregistered guns in the country. Military sources estimate the figure at 800,000. Sources in the national police place the total three times as high.

**Introduction:** A long history of civil war, rebellion, and domestic violence has left Colombia with a strong tradition of civilian gun ownership. The armed forces and law enforcement institutions remained relatively small, though, until pressure from insurgencies and narco-trafficking led to their rapid expansion as of the 1980s.

**Armed forces:** From a total of roughly 50,000 active personnel in uniform in the 1960s, Colombia's armed forces have expanded to 230,000 personnel for all services, creating a potential requirement for as many as 534,000 small arms and light weapons.

This requirement makes it difficult to convince Colombian leaders that their forces are over-stocked. Until domestic security improves enough to allow significant troop cuts, surplus destruction will tend to be a marginal activity.

While active forces expand, Colombia has not inflated the size of its reserves. This trend distinguishes Colombia from most of its immediate neighbours, where reserve rolls are permanently inflated, justifying exaggerated weapons inventories.

**Surpluses:** Continuous expansion means that the Colombian armed forces are only now at their peak strength. There is no evidence of excess procurement; it is thus unlikely that they have substantial surpluses.

The most important source of excess equipment is the reserves, trimmed in 1994, potentially rendering surplus some 66,000 weapons. Whether Colombian authorities regard these weapons as surplus is dubious, since simultaneous expansion of active-duty forces created new demand.

**MANPADS:** Colombia's only publicly identified MANPADS are Mistrals for the navy's four FS-1500 frigates.

The MANPADS discussion in Colombia focuses more on its insurgencies. There are widespread rumours that the FARC or ELN is trying to acquire MANPADS. None can be confirmed. There are no reliable reports of Colombian guerrillas using MANPADS to attack aircraft.

**Law enforcement:** The national police are authorized a total of 137,000 sworn personnel. Representatives of the national police report that every sworn officer is entitled to up to two personal small arms. In practice, however, the national police cannot issue each officer his or her own weapon.

**Civilian ownership:** Registered civilian gun ownership reached 706,210 firearms as of mid-2005. This indicates a ratio of 1.53 legal arms per 100 civilians, a low ownership rate, which suggests that most civilian guns are unregistered.

Despite Colombia's strict regulatory regime, there are many unregistered guns in the country. Military sources estimate that there are as many as 800,000 unregistered weapons. National police sources, on the other hand, contend that the number is closer to 2.4 million.

**The guerrillas (FARC and ELN):** Conventional wisdom holds that the FARC had roughly 20,000 combatants in the 1990s, declining to about 5,000 today. The ELN is thought to have some 2,500 active members. Deserters have been encouraged to hand in their weapons to authorities, which has seriously depleted guerrilla inventories. Weapons appear to be adequate for guerrillas, but ammunition is scarce.

Interviews with guerrilla deserters reveal unusually strong command and control over their weapons, in both possession and use. This suggests that systematic disarmament is possible, if and when such a decision were to be made.

**The AUC:** Paramilitaries currently appear to have a more reliable, sophisticated, and plentiful supply of small arms and light weapons than the guerrillas.

More than 17,000 AUC weapons were handed in by more than 31,000 demobilized members. Most of these were automatic rifles, many of high quality. Also turned in were a considerable amount of explosives. The small arms turned in by the AUC have been stored; destruction remains politically sensitive.

## Ecuador

The exceptional autonomy of Ecuador's armed services is especially important for surplus weapons destruction. Although the armed forces officially deny they have any surplus equipment, surpluses appear to be substantial.

Based on changes in active-duty personnel alone, about 49 per cent of the country's estimated inventory of modern military weapons is in excess of likely requirements. If obsolescent small arms are included, the total rises to more than 60 per cent of all suspected military holdings. Decisions on their fate will be made by the commanders of the armed services, not civilian officials.

A major problem concerns Ecuador's reserve capabilities. These were first recorded in 1989 at 100,000 personnel. Subsequent army cutbacks were offset by the expansion of the reserves to 118,000. The large reserve system is used to justify retention of any Ecuadorean surplus, yet it is not clear whether the reserves consist of actual, designated units and trained soldiers. The reserve system has the effect of concealing military surpluses.

If reserve capabilities are accepted at face value, Ecuador has no extra military weapons. On the contrary, it could suffer from a serious shortfall of as much as 140,000 modern small arms. If reserves are regarded instead as potential forces unrelated to immediate requirements, as they are in this assessment, the country has a significant military small arms surplus.

Civilian ownership is relatively low in Ecuador, even when estimated illegal weapons are counted. Consequently, military surplus destruction could have a significant effect on the overall distribution of Ecuador's firearms and small arms, reducing the exceptionally high share controlled by the state, currently about 36 per cent of the country's total.

**Introduction:** Ecuador is one of two countries in the region to have waged a conventional war in the past decade (the other being Peru, Ecuador's tradi-



Table 10 **Estimated total small arms, firearms, and surpluses in Ecuador, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Armed forces			134,000	66,000
	Air force	2,000		
	Army	125,000		
	Navy	7,000		
	Reserves	0		
Military obsolescent		35,000	35,000	35,000
Law enforcement			12,000	0
Civilian total			370,000	
	Legal	117,000		
	Illegal	250,000		
<b>Total</b>			<b>585,000</b>	<b>100,000</b>

tional adversary). Though short, the 1995 war justified large-scale purchases of new weaponry and support equipment.

Success against numerically superior Peru gave the Ecuadorean military privileged standing among government institutions. As a result, the armed forces gained exceptional autonomy, putting them in a position of relative equality rather than disciplined obedience to civilian authority.

**Armed forces:** Ecuador’s army shrank by 13,000 soldiers in the past decade and a half, creating a considerable armaments surplus. As a result, roughly 20,000 modern military weapons were made superfluous, although they have now been claimed by the reserves.

Ecuadorean army weapons are remarkably dispersed, thinly spread to match the army’s unusual basing structure. This creates obvious problems of control and risks of illegal diversion.

A major problem concerns Ecuador’s reserve capabilities. Army cutbacks were offset by the expansion of reserves, now allocated 118,000 personnel. If reserve capabilities are accepted at face value, Ecuador has no extra military weapons. If reserves are titular forces, as widely suspected, the country has a significant military small arms surplus.

**MANPADS:** Although it is one of the smaller countries of South America, Ecuador appears to maintain a large and diversified MANPADS inventory, arming largely in case of renewed border war with Peru and border disputes with Colombia (possibly catalysed by the cross-border activities of insurgencies such as the FARC, as seen in March 2008).

Unlike in most other countries of South America, Ecuador’s MANPADS are distributed among the three major armed services. Compounded by exceptional service autonomy, this represents a difficult control challenge.

**Obsolescent military small arms:** Any obsolescent guns that remain from the 35,000 or so purchased in previous decades are Ecuador’s mostly likely candidates for surplus destruction. The key to their elimination may be convincing military leaders of the irrelevance of massive, untrained infantry in contemporary warfare.

**Law enforcement:** As is the case in most other nations in South America, Ecuador’s national police has its origins in the military and plays a key role in regime stability. Organized in military style, the force is relatively small, its personnel having grown in recent years to 37,000. Yet its official small arms inventory is only 12,000. Most officers must buy their own weapons.

**Civilian firearms:** Ecuadoreans are allowed to own two firearms. Gun ownership has increased dramatically over the past half decade. Some 117,000

Table 11 **Publicly reported Ecuadorean MANPADS**

Supplier	Number ordered	Designation	Year ordered	Year delivered	Grip stocks/ launchers
Britain	150	Blowpipe	?	?	?
France	?	Mistral	?	?	4
Russia/ USSR?	20+	SA-7 Grail	?	?	?
Russia/ USSR?	20+	SA-16 Gimlet	?	?	?
Russia	222	SA-18 Iгла	1997	1998	14

Sources: SIPRI (2008); IISS (2007)

firearm-carrying permits were issued by military authorities between 1998 and 2005. No less revealing is the change in civilian acquisition, which increasingly appears to favour the black market, cautiously estimated here to be roughly double the regulated market.

## Guyana

As a result of massive cutbacks in declaratory strength since the mid-1980s, the Guyana Defence Force (GDF) declined from roughly 9,600 to fewer than 2,000 personnel. The result is the greatest decline in small arms requirements of any country reviewed in this study, creating a highly unpredictable situation. Concerns are exacerbated by the GDF's exceptional lack of transparency about its capabilities and holdings.

Previously able to justify almost 19,000 military rifles and other small arms, the GDF today has no purely military reason to retain more than 3,200 small arms. This process may have rendered an estimated 15,700 small arms and light weapons (equal to 83 per cent of the estimated total) militarily superfluous.

These weapons are controlled by a military with only 1,100 full-time personnel, a potentially destabilizing situation anywhere. The dangers were illustrated in 2000 by ammunition explosions at Camp Groomes and the theft of 30 AK rifles from Camp Ayanganna in 2006.

Civilian ownership includes some 56,000 registered firearms and an approximately equal number of unregistered guns. The latter are dominated by Brazilian revolvers but include a growing number of automatic rifles, and contribute directly to Guyana's rapidly increasing gun violence, shown by a series of recent massacres.

**Introduction:** English-speaking Guyana has much more in common with the Caribbean region than other South American countries. Nevertheless, its domestic and regional security is increasingly dominated by its immediate continental neighbours, Venezuela, Suriname, and Brazil.

Since the 1980s, the size of Guyana's armed forces has declined dramatically, creating the largest surplus small arms stockpile (as a proportion of total inventory) in the region.

Table 12 **Estimated total small arms, firearms, and surpluses in Guyana, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Guyana Defence Force			18,000	16,000
	Air force	150		
	Army	15,000		
	Navy	150		
	Reserves	4,000		
Law enforcement			2,000	0
Civilian total			110,000	
	Legal	56,000		
	Illegal	55,000		
<b>Total</b>			<b>130,000</b>	<b>16,000</b>

Rising criminality—especially trans-shipments of illegal drugs—has contributed significantly to an increase in gun violence. Border disputes with both Venezuela and Suriname have strained relations with two of the country’s three neighbours, while current road construction along the Brazilian border has introduced additional risks. As long as political instability and government inefficiency undermine efforts to address these issues, the situation is not likely to improve.

**Armed forces:** The Guyana Defence Force came into existence in 1965, just before independence, when training began under a team of British instructors. In 1969, the GDF quelled an insurrection led by ranchers in the interior, who were believed to have been supported by Venezuela. That same year, the GDF expelled Surinamese soldiers from a disputed area in south-eastern Guyana.

Personnel has dropped from 7,000–8,500 in the mid-1980s to approximately 1,770 today (including reservists). Payroll padding may have exaggerated actual strength in the past.

At its peak declaratory strength in the mid-1980s, the GDF could present a legitimate case for almost 19,000 rifles and other small arms. The massive

decline in personnel since the end of the cold war renders more than 80 per cent of this hardware militarily superfluous. Even at maximum levels of arming better suited to NATO countries, the GDF cannot justify retention of more than 3,200 small arms.

Ammunition explosions in 2000 and a major weapons theft in 2006 indicate serious weaknesses in storage and security.

**Law enforcement:** Guyana's police force has roughly 2,400 sworn officers with an estimated total of 2,400 small arms. Most supplies—including ammunition and surplus small arms—are stored at the Eve Leary Headquarters in Kingston, Georgetown. Security at Eve Leary and other stations is weak and there appears to be a need to tighten controls over the process of storage and transfer of weaponry in the hands of the military and law enforcement agencies.

**Civilian ownership:** Despite widespread public belief in Guyana that firearm legislation is too lax, strong laws already exist. The problem reportedly lies with enforcement. New gun licence approvals declined significantly in recent years, from 2,164 in 2003 to about one-third of that in recent years. Despite a decline in armed violence in Guyana during 2007, armed attacks at Lusignan and Bartica in early 2008, killing 11 and 13, respectively, leave no doubt about serious security risks.

## Paraguay

According to non-official disclosures by Ministry of Defence officials in project interviews, the Paraguayan armed forces have approximately 40,000 small arms currently in use. Assessing the total number of military small arms and light weapons in Paraguay is a difficult task even for the armed forces. In 2004, according to statements to project researchers, documentation on arms inventories as well as administrative audit reports disappeared. Endemic theft and pilferage make it likely that significant quantities of surplus weapons have already gone missing.

While active forces have declined sharply, reserves jumped from 45,000 in 1994 to 164,500 the following year, a level since maintained. The opposite trajectories of Paraguay's active and reserve elements creates substantial concern

regarding small arms and light weapons policy. While increasing reserves has the potential to absorb all weapons rendered surplus by active-duty cuts, the reserves may only exist on paper.

Rival accounting systems make registration data unreliable, but there seems to be agreement that roughly 330,000 civilian guns have been registered. There is also consensus that the amount of illegal arms is much higher than the amount registered. If unregistered weapons are double the number known to authorities, there would be some 650,000 illegal guns in Paraguayan hands. At this level of legal and illegal ownership, though, Paraguay would still have a per capita ownership rate half that of neighbouring Uruguay.

Illegal ownership is facilitated by massive smuggling through the infamous Triple Border with Argentina and Brazil. Reports suggest that only about 30 per cent of weapons imports are declared.

**Introduction:** After 35 years of dictatorship under Alfred Stroessner, the country’s military institutions were left discredited, obsolete, and publicly distrusted. It is widely accepted that the Paraguayan armed forces are not prepared for armed conflict, inside or outside the country. Despite major corruption problems, the Paraguayan armed forces have begun gradual modernization.

Table 13 **Estimated total small arms, firearms, and surpluses in Paraguay, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Military total			40,000	24,000
	Air force	850		
	Army	38,000		
	Navy	2,000		
	Reserves	?		
National police			7,000	0
Civilian total			1,000,000	
	Legal	330,000		
	Illegal	650,000		
<b>Total</b>			<b>1,050,000</b>	<b>24,000</b>

Paraguay also faces increasing violent crime and major problems with regional gun smuggling, especially in the Triple Border. Neither official institutions nor civil society is equal to the demands of these challenges.

**Armed forces:** In 2006, armed forces manpower was 8,850. Although padding with ghost soldiers makes this figure unreliable, a bigger source of doubt stems from the Paraguayan reserves. While active forces have declined, reserves jumped from 45,000 in 1994 to 164,500 the following year, a level from which they have not retreated.

The opposite trajectories of the Paraguayan active and reserve elements creates substantial concern about small arms and light weapons policy. Increasing reserves has the potential to absorb all weapons rendered surplus by active-duty cuts. Compounding uncertainty is an institutional culture of corruption, including weapons pilfering and resale.

**Military small arms inventories:** According to Ministry of Defence officials, the Paraguayan armed forces have approximately 40,000 small arms. In view of personnel levels there is a reasonable case for a requirement for fewer than half of this amount.

**MANPADS:** Although the Paraguayan armed forces have no MANPADS, there is growing interest in air defence capabilities. Rising tensions over the Bolivian border have aroused nationalist feelings. President Evo Morales's defence of Bolivia's need for MANPADS was carefully observed in Paraguay.

**Law enforcement:** The national police have a total of 7,000 rifles, mostly M16s and Chinese AK rifles. Special police forces have MP-5 sub-machine guns and FAL machine guns. Other agencies have an equal number of small arms. According to the police commissioner, though, police inventories are too small to arm half the active force.

**Civilian firearms:** The Dirección de Material Bélico (DIMABEL or Ministry of Defence Directorate for War Materials) controls civilian arms. In 2007, it counted 333,460 civilian registered firearms, the most common type being .38 revolvers from Brazil.

There is a consensus that illegal arms significantly outnumber those registered. If unregistered weapons are double the number known to authorities, there would be some 650,000 illegal guns in Paraguayan hands.

Smuggling fuels the problem. Reports suggest that only about 30 per cent of gun imports are declared. As a result, in 1996 the United States stopped weapons sales to Paraguay. In 2001 Brazil started an export tax of 150 per cent on arms and ammunition to discourage the trade.

## Peru

Unlike many countries, where 'gun culture' is usually perceived as a product of long historical processes, in Peru it has been shaped much more fundamentally by relatively recent events. These were the military governments of 1962–63 and 1968–80, the civil war with the Shining Path (Sendero Luminoso) that climaxed from 1980 to 1995, and the rise of urban criminality during the last decade. As a recent phenomenon, Peruvian small arms and firearms policy and attitudes may also be more malleable than most.

Detailed Peruvian military small arms accounting is readily available, eliminating the need for some of the estimation techniques used elsewhere in this study. Although there is no reason to doubt the data's reliability, there are serious questions about its completeness. A major unknown concerns reserve forces; they are large on paper, but their actual armaments remain obscure. Police data is also unavailable, apparently as a peculiar consequence of bureaucratic competition.

The army has endured significant cutbacks in the last 20 years and is well below authorized strength. This leaves it with major small arms and light weapons surpluses that its high command would like to destroy but cannot afford to. Interestingly, the air force and navy have the largest small arms surpluses, as a proportion of the total.

Civilian holdings of firearms are estimated at about 750,000, of which roughly 500,000 are probably unregistered.

**Introduction:** In Peru 'gun culture' has been shaped by relatively recent events. First were the military governments of 1962–63 and 1968–80, when most of the small arms and light weapons in use by the armed forces and national police today were acquired.

Second was the Shining Path war, which climaxed in 1980–95. The Shining Path relied on dynamite and improvised explosives, as well as craft single-



Table 14 **Estimated total small arms, firearms, and surpluses in Peru, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Military total			216,000	83,000
	Army		159,000	59,000
	Navy		22,000	11,000
	Air force		19,000	13,000
	Reserves		?	?
	Comités de Autodefensa		15,000	?
National police			170,000	50,000
Civilian total			1,120,000	
	Legal	236,000		
	Illegal	500,000		
<b>Total</b>			<b>1,500,000</b>	<b>133,000</b>

shot guns of iron pipe called *hechizos*. In 1990 the government began arming self-defence committees to fight the Shining Path.

The third factor is rising criminality in Lima and other cities in the last ten years. Peruvian criminality is still lower than elsewhere, but it has encouraged rising demand for guns among civilians.

**Armed forces:** The active strength of the armed services peaked in the mid-1980s, with 130,000 personnel in uniform. Today actual strength is approximately 80,000. This decline leaves at least 40 per cent of modern military small arms and light weapons superfluous. The Peruvian army reports having 159,347 small arms, a large quantity given its current size. The air force is exceptionally well armed, with a higher proportion of small arms than most armies of the world, although it declares none surplus. The status of reserves and reserve equipment is unknown.

**Comités de Autodefensa:** Peru's self-defence committees are local militias established for self-defense against guerrilla attacks. Legally recognized in 1991, they have received more than 15,179 government shotguns. Despite the

general decline of the Shining Path, not one gun has been returned. The group’s recent activity may make the surrender of weapons even less likely.

**MANPADS:** Like those of neighbouring Ecuador, MANPADS in Peru are numerous and highly diversified. They also appear to be poorly controlled. Peru’s MANPADS include Javelins, SA-7s, and SA-16s. At least one report maintains Peru also has SA-18s. With a total of approximately 1,300 to 1,600 MANPADS interceptors, Peru probably has more than any other country on the continent.

Reports indicate that the condition of MANPADS is often poor. Storage security also is a major concern. In September 2006 Peruvians were arrested while transporting an assortment of weapons destined for Colombia’s FARC, including surface-to-air missiles, apparently taken from Peruvian army inventories.

**Law enforcement:** Unlike the armed forces, the Peruvian national police keep the size of its weapons inventories secret. This study finds that the police have around 50,000 obsolescent small arms and light weapons in storage. Otherwise, police inventories must be estimated.

**Civilian ownership:** The Ministry of the Interior has a record of 236,338 firearms registered for civilian use in the country. According to non-governmental experts, though, the actual number of firearms in civilian hands is thought to total around 750,000, about two-thirds of which are probably unregistered. Illegal markets are commonplace, especially in peripheral regions such as the

Table 15 **Publicly reported Peruvian MANPADS\***

Supplier	Number ordered	Designation	Year ordered	Year delivered	Grip stocks/ launchers
Britain	200–500	Javelin	1995	1995	?
Bulgaria	417	SA-16 Gimlet	(1994)	1994–96	56
Nicaragua	216	SA-16 Gimlet	1992	1992–93	72
USSR	(500)	SA-7 Grail	(1978)	1978–81	?

**Note:** \* Estimates in parentheses.

**Sources:** SIPRI (2008); IISS (2007); *Forecast Associates* (2000)

Department of Puno on the Bolivian border. Demand for cheap and unregistered weapons grew during the Shining Path war, expanding a permanent market for illegal craft production of handguns and shotguns, often manufactured in factory quantities.

## Suriname

Despite the tiny absolute size of its armed forces, Suriname appears to host a proportionally massive small arms surplus. Unless large numbers of weapons have been lost or transferred, it has one of the largest surplus stocks in South America. Not counting the pre-war arsenal, the military surplus probably equals 47 per cent of its total small arms inventory. Older equipment would raise this to roughly two-thirds of the military total. The potential for surplus destruction is great.

The vulnerability of Suriname's military stockpiles is a major problem, illustrated by a series of thefts. The illegal gun trade is closely related to cocaine smuggling, exacerbated by the country's highly porous borders. With only 4,000 security personnel in all (police and military), effective control of the borders is impossible. With foreign support, substantial progress has been made in recent years, but the problem remains serious.

Despite repeated inquiries, this research was unable to find out the number of firearms licences and registered civilian guns in Suriname. Extrapolating from economic and population statistics—a technique used by the Small Arms Survey as a last resort—suggests there are approximately 30,000 civilian guns in Suriname. According to the prosecutor general, there are at least 5,000 illegal handguns in Suriname, and even more illegal hunting rifles. This supports the conclusion that total illegal ownership is similar to legal possession, with a total of roughly 30,000 unregistered firearms in the country.

**Introduction:** Large, sparsely inhabited, and geographically isolated, Suriname is vulnerable to illegal activity such as arms and drug trafficking. Gun crimes, once unheard of, are becoming more commonplace. After independence in 1975, social and economic difficulties weakened political and social structures. This situation intensified with the upheaval of military rule and civil war in the 1980s.

Table 16 **Estimated total small arms, firearms, and surpluses in Suriname, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Military total			7,000	3,300
	Air force	100		
	Army	7,000		
	Navy	125		
	Reserves	0		
Obsolescent military			2,000?	2,000?
Law enforcement			2,000	?
Civilian total			60,000	
	Legal	30,000		
	Illegal	30,000		
<b>Total</b>			<b>70,000</b>	<b>3,300+</b>

The chaos of the 1980s elicited unprecedented imports of automatic weapons, for both the army and rebel groups. Single-shot rifles, shotguns, and revolvers were replaced with more deadly equipment, including AK rifles and landmines.

**Armed forces:** Massive troop cuts since the 1980s created equally large equipment surpluses. Unless large numbers of weapons have been lost or transferred out of the country, Suriname proportionately has one of the largest surplus stocks in South America. Not counting the pre-war arsenal, the military surplus probably equals 47 per cent of its total small arms inventory.

The basic army weapon today is the M16 rifle, although G3 rifles are also used. In its 2006 report on confidence building in the region, the United Nations states that Suriname’s armed forces have not purchased any new weapons for more than ten years. This situation was confirmed by the head of International Affairs of the Surinamese army, who also stated that the Surinamese army had no MANPADS.

**Military small arms security:** The vulnerability of military stockpiles in the capital, Paramaribo, is a major problem. In response to thefts, the country’s

armed forces are drastically strengthening their security policy. They also received stockpile security assistance from the United States.

**The national police:** The police commissioner reported that the total number of police handguns was 2,000, all 9 mm Glock pistols, corresponding to the 2,000 members of the institution. The recent acquisition of Glocks suggests that comparable numbers of older revolvers remain, although these may have been exported through a trade-in with Glock, a common arrangement for police forces trying to re-equip economically.

**Civilian firearms:** Despite repeated inquiries, this research was unable to find out the number of firearms licences and registered civilian guns in Suriname. Extrapolation from economic and population statistics suggests there are approximately 30,000 legally owned civilian guns in Suriname, and a similar number of unregistered firearms.

Both Suriname and Guyana accuse each other of not acting aggressively against cross-border smuggling. The illegal arms and drug trade between Suriname and its neighbours are linked to Suriname's highly porous borders. With only 4,000 security personnel in all (police and military), effective control of its borders is impossible.

## Uruguay

With roughly 61,000 modern small arms, the absolute size of Uruguay's military small arms arsenal is not great. But reductions in the number of military personnel over the last 20 years have rendered much of this inventory militarily useless. While some officials deny the existence of a surplus, it will grow if planned modernization takes place. Either way, some surplus destruction is planned.

Unlike many other South American armed forces, Uruguay's make no effort to shield their surplus stocks behind an exaggerated reserve system. Their willingness to discuss surplus destruction potentially makes Uruguay easier to work with on such issues.

In contrast to the relatively small military arsenal, civilian gun ownership is very high. With approximately 1.1 million firearms in civilian hands, Uruguay

has the largest private arsenal on the continent, in per capita terms. This is slowly becoming a public policy issue.

The most likely candidates for surplus destruction are the remains of approximately 80,000 obsolescent military bolt-action rifles, sub-machine guns, and aging light machine guns imported in the first half of the 20th century.

Their status today is unknown. There is no place for these weapons in current national strategy. Among Uruguay’s modern military small arms, at least one-quarter are superfluous, possibly more. Destruction of 13,000 obsolescent police handguns is likely.

The people of Uruguay appear to be the most heavily armed on the continent. Uruguayans have been slow to act, in large part because of widespread public comfort with gun ownership. But this too is changing as gun crime and suicides increase.

**Introduction:** Compared to the other countries of the region, small arms and light weapons are a low priority in Uruguay. Yet with the largest civilian holdings per capita in the region, Uruguay is not immune to problems, witnessing

Table 17 **Estimated total small arms, firearms, and surpluses in Uruguay, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Military total			61,000	14,200
	Air force	2,000		
	Army	56,000		
	Navy	3,300		
	Reserves	0		
Obsolescent military			80,000?	80,000?
Law enforcement			30,000	13,000
Civilian total			1,100,000	
	Legal	593,000		
	Illegal	500,000		
<b>Total</b>			<b>1,300,000</b>	<b>107,000</b>

growing homicide, suicide, gun crime, and smuggling. Firearms were used to commit 57 per cent of homicides in 2005 and 51 per cent of suicides in 2004.

**Armed forces:** The size of the armed forces peaked in the 1980s, creating a requirement for up to 61,000 small arms, which has declined to no more than 46,000 today. Unless some of their equipment has been disposed of, whether through export, private sales, or destruction, the Uruguayan armed forces control a surplus at least one-quarter as large as their required inventory.

**MANPADS:** This study finds no evidence of MANPADS among the Uruguayan armed forces. Several officers interviewed for this study argued that they are not suitable for Uruguayan needs.

**The national police:** The national police are about the same size as the military, with some 26,000 personnel, of which 21,500 are sworn officers. Official data shows that approximately 16,000 arms are recorded under direct national police control, apart from heavy weapons of special units. Older revolvers are being withdrawn, replaced with sub-machine guns and pistols, mostly trendy H&K and Glock models. Once the replacement is completed, the older weapons are due to be destroyed.

**Civilian firearms:** The chief of the national arms registry says that Uruguay has 593,023 registered firearms. Officials believe that around 500,000 more are owned illegally; this figure appears to be an informed guess, based on police seizures. Official statistics show that from May 2005 to May 2006, for example, more than 48 per cent of the arms in judicial deposits were not registered. With at least one million firearms, one for every three residents, Uruguay has the highest per capita gun ownership in the region.

**Destruction policies:** Compared to other countries in the region, Uruguay has exceptionally complete destruction policies. Data provided by the national arms registry shows that between April 1998 and August 2006, a total amount of 19,697 guns were destroyed, of which 14,822 were handguns and 4,875 were long arms. In addition, further destruction is scheduled within the framework of a recently approved small arms law, which will eliminate another 7,100 small arms.

## Venezuela

Private inventories represent the greatest risk factor associated with firearms in Venezuela. With firearms homicides now at about 40 per 100,000 annually, Venezuela has the highest murder rate in South America, and among the highest in the world. Civilian gun ownership is widespread, but Venezuelan data and experts are uncertain about the total. The total scale of civilian ownership must therefore be estimated roughly, at 1.6 to 4.1 million guns.

The small arms of the Venezuelan military and security services pose a very different threat, above all a danger of diversion to regional guerrillas and cocaine traffickers. Because of the continuous growth of the armed forces,

Table 18 **Estimated total small arms, firearms, and surpluses in Venezuela, rounded**

Category	Sub-group	Small arms and firearms	Total	Surplus
Military total			281,000	0
	Air force	16,000		
	Army	107,000		
	Navy	28,000		
	National reserve	23,000		
	National guard	72,000		
	Territorial Guard	35,000		
Obsolescent military			130,000?	0
Police			76,000	0
Civilian total			1,600,000–4,100,000	
	Legal	500,000–1,500,000		
	Illegal	1,100,000–2,700,000		
	Private security	240,000		
<b>Total</b>			<b>2,100,000–4,600,000</b>	<b>0</b>



Venezuelan military leaders can plausibly argue that the country has no significant small arms or light weapons surplus. The establishment of the Territorial Guard, in particular, creates virtually endless requirements for additional small arms. If not for the Territorial Guard, Venezuela would have a military surplus that included all 60,000 of its FALs, recently replaced by the army, and any of its remaining 130,000 obsolescent military small arms.

The most likely candidates for surplus destruction are approximately 130,000 obsolescent bolt-action rifles, submachine guns, and aging light machine guns kept since the first half of the 20th century. But even these aging weapons could serve a legitimate role arming secondary formations. The key to their elimination may be convincing military leaders of the irrelevance of massive, untrained infantry in contemporary warfare.

**Military small arms:** Unlike most of the world's military establishments and those of South America in particular, Venezuela's armed forces have grown throughout the last 30 years, achieving their peak strength only today. In view of the creation by President Hugo Chávez of new, politically loyal organizations such as the 1.5 million-strong Territorial Guard, the Venezuelan military has no reason to acknowledge surpluses. Rather, the growth of the security forces has created a massive demand for future procurement.

The purchase of 100,000 AK-103 rifles from Russia in 2005 is significant, but domestic production could amount to 900,000 more for security organizations such as the Territorial Guard. Production also facilitates exports. Production of 7.62 x 39 mm ammunition could be especially destabilizing, offering regional insurgents a reliable source of Kalashnikov ammunition for the first time.

Colombian spokesmen claim that 400 assault rifles seized from illegal armed groups in Colombia between 1995 and 2000 were engraved with symbols of the Venezuelan armed forces. In April 2008, a Venezuelan officer was caught transporting ammunition to Colombian ELN guerrillas.

The 60,000 FAL rifles procured in the 1960s and 1970s have not been declared surplus, but have been allocated to politically loyal reserve organizations.

**MANPADS:** Until recently, Venezuela's MANPADS inventory includes some 400 Saab RBS-70 missiles and possibly French Mistrals. No details are available on the Mistrals except that they reportedly are controlled by the army. In

October 2006, Saab announced that it would no longer sell weapons to Venezuela, in deference to US restrictions on the transfer to Venezuela of weapons that contain US-made components.

The most likely locations of Venezuelan MANPADS are the 104 Anti-aircraft Defence Group (Maracaibo) and the 304 Anti-aircraft Defence Group (Fuerte Tiuna, Caracas).

Most recently, Venezuela purchased SA-24 MANPADS from Russia. Fifty missiles were displayed during the annual military parade in Caracas on 19 April 2009. The purchase represents a major increase in anti-aircraft capability over Venezuela's pedestal-mounted Swedish RBS-70s. Colombia led international protests against the sale, concerned that these weapons would follow other Venezuelan arms re-transferred to FARC insurgents (*Miami Herald*, 2009).

**Civilian firearms:** On 1 April 1999 the US Department of State indefinitely suspended approval of new export licence applications for civilian weapons destined for Venezuela. Concern with social instability in Venezuela was compounded by suspicion that the country was being used as an illegal channel to divert guns to criminals and guerrillas in Colombia.

An interviewed expert in public security policy estimates that the total number of firearms in circulation in civilian hands in Venezuela is about 800,000 to 1.2 million, of which 40 per cent are illegal. Another official source estimates that there are 2 million weapons owned illegally and 1.5 million 'supposedly controlled' by the state. Together, these figures suggest total private ownership of 1.6 to 4.1 million guns.

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